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 NEWS  4  Feb 16  TOXLINE no longer being updated
 NEWS  5  Apr 23  Search Derwent WPINDEX by chemical structure
 NEWS  6  Apr 23  PRE-1967 REFERENCES NOW SEARCHABLE IN CAPLUS AND CA
 NEWS  7  May 07  DGENE Reload
 NEWS  8  Jun 20  Published patent applications (A1) are now in USPATFULL

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=> s DNA glycosylase#(10a)label## primer#
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L1            0 DNA GLYCOSYLASE#(10A) LABEL## PRIMER#

=> s DNA glycosylase(10a)amplif?

L2           58 DNA GLYCOSYLASE(10A) AMPLIF?

=> s l2 and endonuclease and deoxyribophosphodiesterase#

L3            0 L2 AND ENDONUCLEASE AND DEOXYRIBOPHOSPHODIESTERASE#

=> s l2 and endonuclease#

L4            6 L2 AND ENDONUCLEASE#

=> s l2 and DEOXYRIBOPHOSPHODIESTERASE#

L5            0 L2 AND DEOXYRIBOPHOSPHODIESTERASE#

=> s DEOXYRIBOPHOSPHODIESTERASE#

L6           70 DEOXYRIBOPHOSPHODIESTERASE#

=> s l6 and glycosylase#

L7           25 L6 AND GLYCOSYLASE#

=> s l7 and amplif?

L8            1 L7 AND AMPLIF?

=> d l8 bib ab kwic


L8   ANSWER 1 OF 1  CAPLUS  COPYRIGHT 2001 ACS
AN   1999:691244  CAPLUS
DN   131:318545
TI   A method for the characterization of nucleic acid molecules involving
     generation of extendible upstream DNA fragments resulting from the
     cleavage of nucleic acid at an abasic site
IN   McCarthy, Thomas Valentine; Vaughan, Patrick Martin
PA   Bioresearch Ireland, Ire.; University College Cork
SO   PCT Int. Appl., 69 pp.
     CODEN: PIXXD2
DT   Patent
LA   English
FAN.CNT 1
     PATENT NO.        KIND  DATE           APPLICATION NO.  DATE
     ---------------   ----  --------       ---------------  --------
PI   WO 9954501         A1   19991028       WO 1998-IE30     19980422
         W:  AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE,
             DK, EE, ES, FI, GB, GE, GH, GM, GW, HU, ID, IL, IS, JP, KE, KG,
             KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX,
             NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT,
             UA, UG, US, UZ, VN, YU, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM
         RW: GH, GM, KE, LS, MW, SD, SZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES,
             FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI,
             CM, GA, GN, ML, MR, NE, SN, TD, TG
     AU 9870750          A1   19991108       AU 1998-70750    19980422
     EP 1071811          A1   20010131       EP 1998-917568   19980422
         R:  AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT,
             IE, FI
     NO 2000005311       A    20001221       NO 2000-5311     20001020
PRAI WO 1998-IE30        A    19980422
AB   A method for characterizing nucleic acid mols. comprises the steps of:
(1)
```

introducing a modified base which is a substrate for a DNA **glycosylase** into a DNA mol.; (2) excising the modified base by means of said DNA **glycosylase** so as to generate an abasic site; (3) cleaving the DNA at the abasic site so as to generate an upstream DNA fragment that can be extended; and (4) incubating the extendible upstream fragment in the presence of an enzyme, for example a polymerase or a ligase, allowing for extension thereof and a template nucleic acid and analyzing the resultant fragment(s). The invention provides a novel, versatile and simple method using the above-mentioned extendible upstream DNA fragments which allows characterization of nucleic acids and which has advantages over existing methods. One of the most important uses (but not the only use) of the method according to the invention is to scan or check a fragment of DNA (target nucleic acid) for the presence or absence of a mutation, as exemplified by the detection of a G to A mutation at position 6411 (codon 12) in the human Ki-ras gene. The method cam also be used to analyze the CpG content of DNA by detecting C to T transitions in the DNA.

RE.CNT 5

RE

(1) Applied Genetics Inc; WO 9630545 A 1996 CAPLUS
(2) Epicentre Technologies Corp; WO 9712061 A 1997 CAPLUS
(3) Forfas Trading As Bioresearch; WO 9703210 A 1997 CAPLUS
(4) McGrath, A; ANALYTICAL BIOCHEMISTRY 1998, V259(2), P288 CAPLUS
(5) Vaughan, P; NUCLEIC ACIDS RESEARCH 1998, V26(12), P810

AB A method for characterizing nucleic acid mols. comprises the steps of: (1) introducing a modified base which is a substrate for a DNA **glycosylase** into a DNA mol.; (2) excising the modified base by means of said DNA **glycosylase** so as to generate an abasic site; (3) cleaving the DNA at the abasic site so as to generate an upstream DNA fragment that can be extended; and (4) incubating the extendible upstream fragment in the presence of an enzyme, for example a polymerase or a ligase, allowing for extension thereof and a template nucleic acid and analyzing the resultant fragment(s). The invention provides a novel, versatile and simple method using the above-mentioned extendible upstream DNA fragments which allows characterization of nucleic acids and which has advantages over existing methods. One of the most important uses (but not the only use) of the method according to the invention is to scan or check a fragment of DNA (target nucleic acid) for the presence or absence of a mutation, as exemplified by the detection of a G to A mutation at position 6411 (codon 12) in the human Ki-ras gene. The method cam also be used to analyze the CpG content of DNA by detecting C to T transitions in the DNA.

ST nucleic acid abasic site upstream extension **amplification**; DNA abasic site upstream extension **amplification**; mutation detection abasic site upstream extension **amplification**; CpG detection DNA abasic site extension **amplification**

IT Nucleic acid **amplification** (method)
(DNA; method for the characterization of nucleic acid mols. involving generation of extendible upstream DNA fragments resulting from the cleavage of nucleic acid at an abasic site)

IT 59088-21-0, Uracil DNA **glycosylase** 70356-40-0, DNA **glycosylase** 78783-53-6, Formamidopyrimidine DNA **glycosylase** 111694-06-5, Alkyl-N-purine DNA **glycosylase**
RL: BUU (Biological use, unclassified); BIOL (Biological study); USES (Uses)
(abasic site generation by; method for the characterization of nucleic

acid mols. involving generation of extendible upstream DNA fragments resulting from the cleavage of nucleic acid at an abasic site)

IT 61811-29-8, AP endonuclease 63363-78-0, Endonuclease IV 119940-18-0, **Deoxyribophosphodiesterase**
RL: BUU (Biological use, unclassified); BIOL (Biological study); USES (Uses)
(cleavage at abasic site by; method for the characterization of nucleic acid mols. involving generation of extendible upstream DNA fragments resulting from the cleavage of nucleic acid at an abasic site)

IT 9012-90-2, DNA polymerase
RL: BUU (Biological use, unclassified); BIOL (Biological study); USES (Uses)
(enzymic **amplification** by; method for the characterization of nucleic acid mols. involving generation of extendible upstream DNA fragments resulting from the cleavage of nucleic acid at an abasic site)

=> d l7 1-10 bib ab

L7 ANSWER 1 OF 25 MEDLINE
AN 2001142287 MEDLINE
DN 21093046 PubMed ID: 11170398
TI DNA synthesis and dRPase activities of polymerase beta are both essential for single-nucleotide patch base excision repair in mammalian cell extracts.
AU Podlutsky A J; Dianova I I; Wilson S H; Bohr V A; Dianov G L
CS Laboratory of Molecular Genetics, National Institute on Aging, NIH, Baltimore, Maryland 21224, USA.
SO BIOCHEMISTRY, (2001 Jan 23) 40 (3) 809-13.
Journal code: A0G; 0370623. ISSN: 0006-2960.
CY United States
DT Journal; Article; (JOURNAL ARTICLE)
LA English
FS Priority Journals
EM 200103
ED Entered STN: 20010404
Last Updated on STN: 20010404
Entered PubMed: 20010222
Entered Medline: 20010308
AB In mammalian cells the majority of altered bases in DNA are processed through a single-nucleotide patch base excision repair mechanism. Base excision repair is initiated by a DNA **glycosylase** that removes a damaged base and generates an abasic site (AP site). This AP site is further processed by an AP endonuclease activity that incises the phosphodiester bond adjacent to the AP site and generates a strand break containing 3'-OH and 5'-sugar phosphate ends. In mammalian cells, the 5'-sugar phosphate is removed by the AP lyase activity of DNA polymerase beta (Pol beta). The same enzyme also fills the gap, and the DNA ends are finally rejoined by DNA ligase. We measured repair of oligonucleotide substrates containing a single AP site in cell extracts prepared from normal and Pol beta-null mouse cells and show that the reduced repair in Pol beta-null extracts can be complemented by addition of purified Pol beta. Using this complementation assay, we demonstrate that mutated Pol beta without dRPase activity is able to stimulate long patch BER. Mutant Pol beta deficient in DNA synthesis, but with normal dRPase activity, does not stimulate repair in Pol beta-null cells. However, under conditions where we measure base excision repair accomplished exclusively through a single-nucleotide patch BER, neither dRPase nor DNA synthesis mutants of Pol beta alone, or the two together, were able to complement the repair defect. These data suggest that the dRPase and DNA synthesis activities of

Pol beta are coupled and that both of these Pol beta functions are essential during short patch BER and cannot be efficiently substituted by other cellular enzymes.

L7 ANSWER 2 OF 25 MEDLINE
AN 2000143993 MEDLINE
DN 20143993 PubMed ID: 10677682
TI AP lyases and dRPases: commonality of mechanism.
AU Piersen C E; McCullough A K; Lloyd R S
CS Center for Molecular Science, University of Texas Medical Branch, Galveston, TX 77555-1071, USA.
NC ES04091 (NIEHS)
ES05780 (NIEHS)
ES06676 (NIEHS)
SO MUTATION RESEARCH, (2000 Feb 16) 459 (1) 43-53.
Journal code: NNA; 0400763. ISSN: 0027-5107.
CY Netherlands
DT Journal; Article; (JOURNAL ARTICLE)
LA English
FS Priority Journals
EM 200003
ED Entered STN: 20000413
Last Updated on STN: 20000413
Entered Medline: 20000331
AB Enzymes that release 5'-deoxyribose-5-phosphate (dRP) residues from preincised apurinic/apyrimidinic (AP) DNA have been collectively termed DNA **deoxyribophosphodiesterases** (dRPases), but they fall into two distinct categories: the hydrolytic dRPases and AP lyases. In order to resolve a number of conflicting reports in the dRPase literature, we examined two putative hydrolytic dRPases (Escherichia coli exonuclease I (exo I) and RecJ) and four AP lyases (E. coli 2, 6-dihydroxy-5N-formamidopyrimidine (Fapy) DNA **glycosylase** (Fpg) and endonuclease III (endo III), bacteriophage T4 endonuclease V (endo V), and rat polymerase beta (beta-pol)) for their abilities to (i) excise dRP from preincised AP DNA and (ii) incise AP DNA. Although exo I and RecJ exhibited robust 3' to 5' and 5' to 3' exonucleolytic activities, respectively, on appropriate substrates, they failed to demonstrate detectable dRPase activity. All four AP lyases possessed both dRPase and traditional AP lyase activities, albeit to varying degrees. Moreover, as best illustrated with Fpg, AP lyase enzymes could be trapped on both preincised and unincised AP DNA using NaBH(4) as the reducing agent. These results further support the assertion that the catalytic mechanism of the AP lyases, the beta-elimination reaction, does proceed through an imine enzyme-DNA intermediate and that the active site residues responsible for dRP release must contain primary amines. Further, these data indicate a biological significance for the beta-elimination reaction of DNA **glycosylase**/AP lyases in that they, in concert with hydrolytic AP endonucleases, can create appropriate gapped substrates for short patch base excision repair (BER) synthesis to occur efficiently.

L7 ANSWER 3 OF 25 MEDLINE
AN 1998026845 MEDLINE
DN 98026845 PubMed ID: 9358166
TI The yeast 8-oxoguanine DNA **glycosylase** (Ogg1) contains a DNA **deoxyribophosphodiesterase** (dRpase) activity.
AU Sandigursky M; Yacoub A; Kelley M R; Xu Y; Franklin W A; Deutsch W A
CS Department of Radiology, Albert Einstein College of Medicine, Bronx, NY 10461, USA.
NC CA52025 (NCI)
ES07815 (NIEHS)
RR-09884 (NCRR)

+
SO NUCLEIC ACIDS RESEARCH, (1997 Nov 15) 25 (22) 4557-61.
Journal code: O8L; 0411011. ISSN: 0305-1048.
CY ENGLAND: United Kingdom
DT Journal; Article; (JOURNAL ARTICLE)
LA English
FS Priority Journals
EM 199801
ED Entered STN: 19980129
Last Updated on STN: 19980129
Entered Medline: 19980114
AB The yeast OGG1 gene was recently cloned and shown to encode a protein that
possesses N-**glycosylase**/AP lyase activities for the repair of oxidatively damaged DNA at sites of 7,8-dihydro-8-oxoguanine (8-oxoguanine). Similar activities have been identified for Escherichia coli formamidopyrimidine-DNA **glycosylase** (Fpg) and Drosophila ribosomal protein S3. Both Fpg and S3 also contain a **deoxyribophosphodiesterase** (dRpase) activity that removes 2-deoxyribose-5-phosphate at an incised 5' apurinic/apyrimidinic (AP) sites via a beta-elimination reaction. Drosophila S3 also has an additional activity that removes trans-4-hydroxy-2-pentenal-5-phosphate at
a 3' incised AP site by a Mg2+-dependent hydrolytic mechanism. In view of the substrate similarities between Ogg1, Fpg and S3 at the level of base excision repair, we examined whether Ogg1 also contains dRpase activities.
A glutathione S-transferase fusion protein of Ogg1 was purified and subsequently found to efficiently remove sugar-phosphate residues at incised 5' AP sites. Activity was also detected for the Mg2+-dependent removal of trans -4-hydroxy-2-pentenal-5-phosphate at 3' incised AP sites and from intact AP sites. Previous studies have shown that DNA repair proteins that possess AP lyase activity leave an inefficient DNA terminus for subsequent DNA synthesis steps associated with base excision repair. However, the results presented here suggest that in the presence of MgCl2,
Ogg1 can efficiently process 8-oxoguanine so as to leave a one nucleotide gap that can be readily filled in by a DNA polymerase, and importantly, does not therefore require additional enzymes to process trans -4-hydroxy-2-pentenal-5-phosphate left at a 3' terminus created by a beta-elimination catalyst.

L7 ANSWER 4 OF 25 MEDLINE
AN 97238550 MEDLINE
DN 97238550 PubMed ID: 9132000
TI Evidence for a recombination-independent pathway for the repair of DNA interstrand cross-links based on a site-specific study with nitrogen mustard.
AU Berardini M; Mackay W; Loechler E L
CS Department of Biology, Boston University, Massachusetts 02215, USA.
NC CA49198 (NCI)
CA63396 (NCI)
SO BIOCHEMISTRY, (1997 Mar 25) 36 (12) 3506-13.
Journal code: A0G; 0370623. ISSN: 0006-2960.
CY United States
DT Journal; Article; (JOURNAL ARTICLE)
LA English
FS Priority Journals
EM 199704
ED Entered STN: 19970507
Last Updated on STN: 19970507
Entered Medline: 19970429
AB DNA-DNA interstrand cross-links are thought to be important for the cytotoxicity of many chemotherapeutic agents. To study this more definitively, adduct site-specific methods are used to construct a plasmid

with a single nitrogen mustard interstrand cross-link (inter-HN2-pTZSV28).
Replication efficiency (RE = [colonies from (inter-HN2-pTZSV28)/(control with no cross-link)]) is approximately 0.3 following transformation into Escherichia coli, implying that the cross-link is repaired. The commonly accepted pathway for cross-link repair, which involves both nucleotide excision repair (NER) and recombination, is ruled out since RE is approximately 0.3 in a delta recA strain. Non-RecA-directed recombination such as copy-choice is also unlikely. However, NER is involved since RE was approximately 0.02 in strains deficient in NER. Base excision repair is not important since RE is approximately 0.3 in strains deficient in 3-methyladenine DNA **glycosylases** I and II, FAPY DNA **glycosylase**, both known apurinic/apyrimidinic endonucleases, or DNA **deoxyribophosphodiesterase**. Another hypothetical repair pathway hinging on a 5' --> 3' exonuclease activity is unlikely since RE is approximately 0.3 in cells deficient in either the 5' --> 3' exonuclease activities of DNA polymerase I, exonuclease VII, or RecJ. Thus, aside from NER, it is unclear what else participates in this recombination-independent repair pathway, although a pathway involing NER followed by replicative bypass of the lesion is the current working hypothesis. Psoralen interstrand cross-links appear not to be repairable by this second pathway, which may have implications for the relative cytotoxicity of interstrand cross-links from different agents.

L7 ANSWER 5 OF 25 MEDLINE
AN 94240228 MEDLINE
DN 94240228 PubMed ID: 8183999
TI DNA **deoxyribophosphodiesterase** and an activity that cleaves DNA containing thymine glycol adducts in Deinococcus radiodurans.
AU Mun C; Del Rowe J; Sandigursky M; Minton K W; Franklin W A
CS Department of Radiation Oncology, Albert Einstein College of Medicine, Bronx, New York 10461.
NC CA52025 (NCI)
GM39933 (NIGMS)
SO RADIATION RESEARCH, (1994 May) 138 (2) 282-5.
Journal code: QMP; 0401245. ISSN: 0033-7587.
CY United States
DT Journal; Article; (JOURNAL ARTICLE)
LA English
FS Priority Journals
EM 199406
ED Entered STN: 19940621
Last Updated on STN: 19940621
Entered Medline: 19940614
AB Deinococcus radiodurans is the most radioresistant bacterium discovered to
date. Recently it has been demonstrated that this organism contains the DNA repair enzyme uracil-DNA **glycosylase** and an apurinic/apyrimidinic (AP) endonuclease that may function as part of a DNA
base excision repair pathway. We demonstrate here that a DNA **deoxyribophosphodiesterase** activity that acts on incised AP sites in DNA to remove deoxyribose-phosphate groups is found in lysates prepared
from D. radiodurans cells. The partially purified activity was found to be
smaller in size than the E. coli dRpase activity, with an estimated molecular weight of 25-30 kDa. In addition, an activity that recognizes and cleaves DNA containing thymine glycols was also detected, with a molecular weight of approximately 30 kDa. This enzyme may be analogous to the thymine glycol **glycosylase**/AP lyase endonuclease III of E. coli.

L7 ANSWER 6 OF 25 MEDLINE
AN 93291446 MEDLINE

DN 93291446 PubMed ID: 8513149
TI The repair of ionising radiation-induced damage to DNA.
AU Price A
CS Department of Radiotherapy, Royal Marsden Hospital, London, UK.
SO SEMINARS IN CANCER BIOLOGY, (1993 Apr) 4 (2) 61-71. Ref: 78
Journal code: A6Y; 9010218. ISSN: 1044-579X.
CY United States
DT Journal; Article; (JOURNAL ARTICLE)
General Review; (REVIEW)
(REVIEW, TUTORIAL)
LA English
FS Priority Journals
EM 199307
ED Entered STN: 19930806
Last Updated on STN: 19930806
Entered Medline: 19930722
AB Exposure of DNA to ionising radiation produces a variety of lesions. Double-strand breaks are repaired by recombinational pathways including a rapid single-strand annealing process which results in deletion of DNA sequences, and a double-strand break repair pathway which conserves genetic information. Single-strand breaks are repaired by the sequential action of a 3'-phosphodiesterase, DNA polymerase beta and a DNA ligase. Damaged bases are excised by DNA **glycosylases**, and a single-base gap introduced, either by the action of an AP endonuclease activity and a DNA **deoxyribophosphodiesterase**, or by the AP lyase activity of the **glycosylase** and an AP endonuclease. Repair is completed by DNA polymerase beta and a DNA ligase.

L7 ANSWER 7 OF 25 MEDLINE
AN 92195306 MEDLINE
DN 92195306 PubMed ID: 1549115
TI Generation of single-nucleotide repair patches following excision of uracil residues from DNA.
AU Dianov G; Price A; Lindahl T
CS Imperial Cancer Research Fund, Clare Hall Laboratories, South Mimms, Hertfordshire, United Kingdom.
SO MOLECULAR AND CELLULAR BIOLOGY, (1992 Apr) 12 (4) 1605-12. QH 506.M6
Journal code: NGY; 8109087. ISSN: 0270-7306.
CY United States
DT Journal; Article; (JOURNAL ARTICLE)
LA English
FS Priority Journals
EM 199204
ED Entered STN: 19920509
Last Updated on STN: 19920509
Entered Medline: 19920422
AB The extent and location of DNA repair synthesis in a double-stranded oligonucleotide containing a single dUMP residue have been determined. Gently prepared Escherichia coli and mammalian cell extracts were employed for excision repair in vitro. The size of the resynthesized patch was estimated by restriction enzyme analysis of the repaired oligonucleotide. Following enzymatic digestion and denaturing gel electrophoresis, the extent of incorporation of radioactively labeled nucleotides in the vicinity of the lesion was determined by autoradiography. Cell extracts of E. coli and of human cell lines were shown to carry out repair mainly by replacing a single nucleotide. No significant repair replication on the 5' side of the lesion was observed. The data indicate that, after cleavage of the dUMP residue by uracil-DNA **glycosylase** and incision of the resultant apurinic-apyrimidinic site by an apurinic-apyrimidinic endonuclease activity, the excision step is catalyzed usually by a DNA **deoxyribophosphodiesterase** rather than by an exonuclease.

Gap-filling and ligation complete the repair reaction. Experiments with enzyme inhibitors in mammalian cell extracts suggest that the repair replication step is catalyzed by DNA polymerase beta.

L7 ANSWER 8 OF 25 BIOSIS COPYRIGHT 2001 BIOSIS
AN 2000:135774 BIOSIS
DN PREV200000135774
TI AP lyases and dRPases: Commonality of mechanism.
AU Piersen, Colleen E.; McCullough, Amanda K.; Lloyd, R. Stephen (1)
CS (1) Center for Molecular Science, University of Texas Medical Branch, Galveston, TX, 77555-1071 USA
SO Mutation Research., (Feb. 16, 2000) Vol. 459, No. 1, pp. 43-53. ISSN: 0027-5107.
DT Article
LA English
SL English
AB Enzymes that release 5'-deoxyribose-5-phosphate (dRP) residues from preincised apurinic/apyrimidinic (AP) DNA have been collectively termed DNA **deoxyribophosphodiesterases** (dRPases), but they fall into two distinct categories: the hydrolytic dRPases and AP lyases. In order to resolve a number of conflicting reports in the dRPase literature, we examined two putative hydrolytic dRPases (Escherichia coli exonuclease I (exo I) and RecJ) and four AP lyases (E. coli 2,6-dihydroxy-5N-formamidopyrimidine (Fapy) DNA **glycosylase** (Fpg) and endonuclease III (endo III), bacteriophage T4 endonuclease V (endo V), and rat polymerase beta (beta-pol)) for their abilities to (i) excise dRP from preincised AP DNA and (ii) incise AP DNA. Although exo I and RecJ exhibited robust 3' to 5' and 5' to 3' exonucleolytic activities, respectively, on appropriate substrates, they failed to demonstrate detectable dRPase activity. All four AP lyases possessed both dRPase and traditional AP lyase activities, albeit to varying degrees. Moreover, as best illustrated with Fpg, AP lyase enzymes could be trapped on both preincised and unincised AP DNA using NaBH4 as the reducing agent. These results further support the assertion that the catalytic mechanism of the AP lyases, the beta-elimination reaction, does proceed through an imine enzyme-DNA intermediate and that the active site residues responsible for dRP release must contain primary amines. Further, these data indicate a biological significance for the beta-elimination reaction of DNA **glycosylase**/AP lyases in that they, in concert with hydrolytic AP endonucleases, can create appropriate gapped substrates for short patch base excision repair (BER) synthesis to occur efficiently.

L7 ANSWER 9 OF 25 BIOSIS COPYRIGHT 2001 BIOSIS
AN 1999:367922 BIOSIS
DN PREV199900367922
TI Eukaryotic DNA repair enzymes with **deoxyribophosphodiesterase** (dRpase) activities.
AU Franklin, William A. (1); Sandigursky, Margarita (1); Deutsch, Walter A.; Yacoub, Adly; Kelley, Mark R.
CS (1) Departments of Radiology and Radiation Oncology, Albert Einstein College of Medicine, Bronx, NY, 10461 USA
SO Dizdaroglu, M. [Editor]; Karakaya, A. E. [Editor]. NATO ASI Series Series A Life Sciences, (1999) Vol. 302, pp. 453-454. NATO ASI Series Series A Life Sciences; Advances in DNA damage and repair: Oxygen radical effects, cellular protection, and biological consequences.
Publisher: Kluwer Academic Publishers PO Box 989, 3300 AZ Dordrecht, The Netherlands.
Meeting Info.: Proceedings of a NATO Advanced Study Institute Antalya, Turkey October 14-24, 1997 NATO Scientific Affairs Division, Belgium . ISSN: 0258-1213. ISBN: 0-306-46042-4.
DT Conference
LA English

L7 ANSWER 10 OF 25 BIOSIS COPYRIGHT 2001 BIOSIS
AN 1999:367889 BIOSIS
DN PREV199900367889
TI Drosophila ribosomal protein S3 contains N-**glycosylase**, abasic site, and **deoxyribophosphodiesterase** DNA repair activities.
AU Deutsch, Walter A. (1)
CS (1) Pennington Biomedical Research Center, Louisiana State University, Baton Rouge, LA, 70808 USA
SO Dizdaroglu, M. [Editor]; Karakaya, A. E. [Editor]. NATO ASI Series Series A Life Sciences, (1999) Vol. 302, pp. 89-96. NATO ASI Series Series A Life Sciences; Advances in DNA damage and repair: Oxygen radical effects, cellular protection, and biological consequences.
Publisher: Kluwer Academic Publishers PO Box 989, 3300 AZ Dordrecht, The Netherlands.
Meeting Info.: Proceedings of a NATO Advanced Study Institute Antalya, Turkey October 14-24, 1997 NATO Scientific Affairs Division, Belgium . ISSN: 0258-1213. ISBN: 0-306-46042-4.
DT Book; Conference
LA English

=> dup rem l7

PROCESSING COMPLETED FOR L7
L9 14 DUP REM L7 (11 DUPLICATES REMOVED)

=> d l9 1-14 bib ab

L9 ANSWER 1 OF 14 MEDLINE
AN 2001142287 MEDLINE
DN 21093046 PubMed ID: 11170398
TI DNA synthesis and dRPase activities of polymerase beta are both essential for single-nucleotide patch base excision repair in mammalian cell extracts.
AU Podlutsky A J; Dianova I I; Wilson S H; Bohr V A; Dianov G L
CS Laboratory of Molecular Genetics, National Institute on Aging, NIH, Baltimore, Maryland 21224, USA.
SO BIOCHEMISTRY, (2001 Jan 23) 40 (3) 809-13.
Journal code: A0G; 0370623. ISSN: 0006-2960.
CY United States
DT Journal; Article; (JOURNAL ARTICLE)
LA English
FS Priority Journals
EM 200103
ED Entered STN: 20010404
Last Updated on STN: 20010404
Entered PubMed: 20010222
Entered Medline: 20010308
AB In mammalian cells the majority of altered bases in DNA are processed through a single-nucleotide patch base excision repair mechanism. Base excision repair is initiated by a DNA **glycosylase** that removes a damaged base and generates an abasic site (AP site). This AP site is further processed by an AP endonuclease activity that incises the phosphodiester bond adjacent to the AP site and generates a strand break containing 3'-OH and 5'-sugar phosphate ends. In mammalian cells, the 5'-sugar phosphate is removed by the AP lyase activity of DNA polymerase beta (Pol beta). The same enzyme also fills the gap, and the DNA ends are finally rejoined by DNA ligase. We measured repair of oligonucleotide substrates containing a single AP site in cell extracts prepared from normal and Pol beta-null mouse cells and show that the reduced repair in Pol beta-null extracts can be complemented by addition of purified Pol beta. Using this complementation assay, we demonstrate that mutated Pol

beta without dRPase activity is able to stimulate long patch BER. Mutant Pol beta deficient in DNA synthesis, but with normal dRPase activity, does not stimulate repair in Pol beta-null cells. However, under conditions where we measure base excision repair accomplished exclusively through a single-nucleotide patch BER, neither dRPase nor DNA synthesis mutants of Pol beta alone, or the two together, were able to complement the repair defect. These data suggest that the dRPase and DNA synthesis activities of Pol beta are coupled and that both of these Pol beta functions are essential during short patch BER and cannot be efficiently substituted by other cellular enzymes.

L9 ANSWER 2 OF 14 MEDLINE DUPLICATE 1
AN 2000143993 MEDLINE
DN 20143993 PubMed ID: 10677682
TI AP lyases and dRPases: commonality of mechanism.
AU Piersen C E; McCullough A K; Lloyd R S
CS Center for Molecular Science, University of Texas Medical Branch, Galveston, TX 77555-1071, USA.
NC ES04091 (NIEHS)
ES05780 (NIEHS)
ES06676 (NIEHS)
SO MUTATION RESEARCH, (2000 Feb 16) 459 (1) 43-53.
Journal code: NNA; 0400763. ISSN: 0027-5107.
CY Netherlands
DT Journal; Article; (JOURNAL ARTICLE)
LA English
FS Priority Journals
EM 200003
ED Entered STN: 20000413
Last Updated on STN: 20000413
Entered Medline: 20000331
AB Enzymes that release 5'-deoxyribose-5-phosphate (dRP) residues from preincised apurinic/apyrimidinic (AP) DNA have been collectively termed DNA **deoxyribophosphodiesterases** (dRPases), but they fall into two distinct categories: the hydrolytic dRPases and AP lyases. In order to resolve a number of conflicting reports in the dRPase literature, we examined two putative hydrolytic dRPases (Escherichia coli exonuclease I (exo I) and RecJ) and four AP lyases (E. coli 2, 6-dihydroxy-5N-formamidopyrimidine (Fapy) DNA **glycosylase** (Fpg) and endonuclease III (endo III), bacteriophage T4 endonuclease V (endo V), and rat polymerase beta (beta-pol)) for their abilities to (i) excise dRP from preincised AP DNA and (ii) incise AP DNA. Although exo I and RecJ exhibited robust 3' to 5' and 5' to 3' exonucleolytic activities, respectively, on appropriate substrates, they failed to demonstrate detectable dRPase activity. All four AP lyases possessed both dRPase and traditional AP lyase activities, albeit to varying degrees. Moreover, as best illustrated with Fpg, AP lyase enzymes could be trapped on both preincised and unincised AP DNA using NaBH(4) as the reducing agent. These results further support the assertion that the catalytic mechanism of the AP lyases, the beta-elimination reaction, does proceed through an imine enzyme-DNA intermediate and that the active site residues responsible for dRP release must contain primary amines. Further, these data indicate a biological significance for the beta-elimination reaction of DNA **glycosylase**/AP lyases in that they, in concert with hydrolytic AP endonucleases, can create appropriate gapped substrates for short patch base excision repair (BER) synthesis to occur efficiently.

L9 ANSWER 3 OF 14 CAPLUS COPYRIGHT 2001 ACS
AN 1999:691244 CAPLUS

DN 131:318545
TI A method for the characterization of nucleic acid molecules involving generation of extendible upstream DNA fragments resulting from the cleavage of nucleic acid at an abasic site
IN McCarthy, Thomas Valentine; Vaughan, Patrick Martin
PA Bioresearch Ireland, Ire.; University College Cork
SO PCT Int. Appl., 69 pp.
CODEN: PIXXD2
DT Patent
LA English
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 9954501	A1	19991028	WO 1998-IE30	19980422
	W: AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GE, GH, GM, GW, HU, ID, IL, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, US, UZ, VN, YU, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				
	RW: GH, GM, KE, LS, MW, SD, SZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, ML, MR, NE, SN, TD, TG				
	AU 9870750	A1	19991108	AU 1998-70750	19980422
	EP 1071811	A1	20010131	EP 1998-917568	19980422
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, FI				
	NO 2000005311	A	20001221	NO 2000-5311	20001020
PRAI	WO 1998-IE30	A	19980422		

AB A method for characterizing nucleic acid mols. comprises the steps of: (1) introducing a modified base which is a substrate for a DNA **glycosylase** into a DNA mol.; (2) excising the modified base by means of said DNA **glycosylase** so as to generate an abasic site; (3) cleaving the DNA at the abasic site so as to generate an upstream DNA fragment that can be extended; and (4) incubating the extendible upstream fragment in the presence of an enzyme, for example a polymerase or a ligase, allowing for extension thereof and a template nucleic acid and analyzing the resultant fragment(s). The invention provides a novel, versatile and simple method using the above-mentioned extendible upstream DNA fragments which allows characterization of nucleic acids and which has advantages over existing methods. One of the most important uses (but not the only use) of the method according to the invention is to scan or check a fragment of DNA (target nucleic acid) for the presence or absence of a mutation, as exemplified by the detection of a G to A mutation at position 6411 (codon 12) in the human Ki-ras gene. The method can also be used to analyze the CpG content of DNA by detecting C to T transitions in the DNA.

RE.CNT 5
RE
(1) Applied Genetics Inc; WO 9630545 A 1996 CAPLUS
(2) Epicentre Technologies Corp; WO 9712061 A 1997 CAPLUS
(3) Forfas Trading As Bioresearch; WO 9703210 A 1997 CAPLUS
(4) McGrath, A; ANALYTICAL BIOCHEMISTRY 1998, V259(2), P288 CAPLUS
(5) Vaughan, P; NUCLEIC ACIDS RESEARCH 1998, V26(12), P810

L9 ANSWER 4 OF 14 BIOSIS COPYRIGHT 2001 BIOSIS
AN 1999:367889 BIOSIS
DN PREV199900367889
TI Drosophila ribosomal protein S3 contains N-**glycosylase**, abasic site, and **deoxyribophosphodiesterase** DNA repair activities.
AU Deutsch, Walter A. (1)

CS (1) Pennington Biomedical Research Center, Louisiana State University, Baton Rouge, LA, 70808 USA
SO Dizdaroglu, M. [Editor]; Karakaya, A. E. [Editor]. NATO ASI Series Series A Life Sciences, (1999) Vol. 302, pp. 89-96. NATO ASI Series Series A Life Sciences; Advances in DNA damage and repair: Oxygen radical effects, cellular protection, and biological consequences.
Publisher: Kluwer Academic Publishers PO Box 989, 3300 AZ Dordrecht, The Netherlands.
Meeting Info.: Proceedings of a NATO Advanced Study Institute Antalya, Turkey October 14-24, 1997 NATO Scientific Affairs Division, Belgium . ISSN: 0258-1213. ISBN: 0-306-46042-4.
DT Book; Conference
LA English

L9 ANSWER 5 OF 14 BIOSIS COPYRIGHT 2001 BIOSIS
AN 1999:367922 BIOSIS
DN PREV199900367922
TI Eukaryotic DNA repair enzymes with **deoxyribophosphodiesterase** (dRpase) activities.
AU Franklin, William A. (1); Sandigursky, Margarita (1); Deutsch, Walter A.; Yacoub, Adly; Kelley, Mark R.
CS (1) Departments of Radiology and Radiation Oncology, Albert Einstein College of Medicine, Bronx, NY, 10461 USA
SO Dizdaroglu, M. [Editor]; Karakaya, A. E. [Editor]. NATO ASI Series Series A Life Sciences, (1999) Vol. 302, pp. 453-454. NATO ASI Series Series A Life Sciences; Advances in DNA damage and repair: Oxygen radical effects, cellular protection, and biological consequences.
Publisher: Kluwer Academic Publishers PO Box 989, 3300 AZ Dordrecht, The Netherlands.
Meeting Info.: Proceedings of a NATO Advanced Study Institute Antalya, Turkey October 14-24, 1997 NATO Scientific Affairs Division, Belgium . ISSN: 0258-1213. ISBN: 0-306-46042-4.
DT Conference
LA English

L9 ANSWER 6 OF 14 CAPLUS COPYRIGHT 2001 ACS
AN 2000:143098 CAPLUS
DN 132:344479
TI Drosophila ribosomal protein S3 contains N-**glycosylase**, abasic site, and **deoxyribophosphodiesterase** DNA repair activities
AU Deutsch, Walter A.
CS Pennington Biomedical Research Center, Louisiana State University, Baton Rouge, LA, 70808, USA
SO NATO ASI Ser., Ser. A (1999), 302(Advances in DNA Damage and Repair), 89-96
CODEN: NALSDJ; ISSN: 0258-1213
PB Kluwer Academic/Plenum Publishers
DT Journal; General Review
LA English
AB A review with 36 refs. The DNA repair activities possessed by Drosophila ribosomal protein S3 (dS3) are summarized in this report. Originally, the dS3 protein was found to possess AP lyase activity similar to that obsd. for the human homolog of S3. Subsequent tests using a heavily UV-irradiated 5' end-labeled oligonucleotide suggested that dS3 was acting on a guanine photoproduct that was detd. to be 2,6-diamino-4-hydroxy-5-formamidopyrimidine. The dS3 protein was also found to act on 5' end-labeled oligonucleotides contg. a single 8-oxoguanine residue. That dS3 was acting as an N-**glycosylase** to process these lesions was confirmed using DNA substrates prepd. by .gamma.-irradn. under N2O and analyzed by gas chromatog./isotope-diln. mass spectrometry. We went on to demonstrate the in vivo significance of this DNA repair activity by

showing the ability of dS3 to abolish completely the mutator phenotype of Escherichia coli mutM (Fpg-) caused by 8-oxoguanine-mediated G to T transversions. The dS3 protein was also able to rescue the alkylation sensitivity of an E. coli mutant defective for the hydrolytic AP endonuclease activities assocd. with exonuclease III and endonuclease IV. That an AP lyase could be a significant source of DNA repair activity for the repair of an AP site came from studies that detd. that dS3 also possessed **deoxyribophosphodiesterase** activity not only for the removal of 5'-incised AP sites, but notably, it was detd. that dS3 could also excise trans-4-hydroxy-2-pentenal-5-phosphate from substrates contg. 3' incised AP sites. Taken together, our results suggest that dS3 is able to create a one nucleotide gap for efficient filling by .beta. polymerase by utilizing its N-**glycosylase**/AP lyase activity to create a 3' terminal AP site that can then be liberated by the dRpase activity possessed by dS3.

RE.CNT 36

RE

(1) Bailly, V; Biochem J 1987, V242, P565 CAPLUS
(2) Bailly, V; Biochem J 1989, V262, P581 CAPLUS
(3) Cabrera, M; J Bacteriol 1988, V170, P5405 CAPLUS
(4) Chetsanga, C; Nucleic Acids Res 1979, V6, P3673 CAPLUS
(5) Clarke, A; British J Haematology 1997, V96, P240 CAPLUS

ALL CITATIONS AVAILABLE IN THE RE FORMAT

L9 ANSWER 7 OF 14 BIOSIS COPYRIGHT 2001 BIOSIS
AN 1998:280521 BIOSIS
DN PREV199800280521
TI Prokaryotic base excision repair.
AU Wilson, David M., III; Engelward, Bevin P.; Samson, Leona
CS Dep. Mol. Cell. Toxicol., Harvard Sch. Publ. Health, Boston, MA USA
SO Nickoloff, J. A. [Editor]; Hoekstra, M. F. [Editor]. (1998) pp. 29-64. DNA damage and repair, Vol. 1. DNA repair in prokaryotes and lower eukaryotes.
Publisher: Humana Press Inc. Suite 808, 999 Riverview Drive, Totowa, New Jersey 07512, USA.
ISBN: 0-89603-356-2.
DT Book
LA English

L9 ANSWER 8 OF 14 CAPLUS COPYRIGHT 2001 ACS
AN 1998:238984 CAPLUS
DN 129:37535
TI Prokaryotic base excision repair
AU Wilson, David M.; Engelward, Bevin P.; Samson, Leona
CS Department of Molecular and Cellular Toxicology, Harvard School of Public Health, Boston, MA, USA
SO DNA Damage Repair (1998), Volume 1, 29-64. Editor(s): Nickoloff, Jac A.; Hoekstra, Merl F. Publisher: Humana, Totowa, N. J.
CODEN: 65VXAD
DT Conference; General Review
LA English
AB A review, with 193 refs. The topics discussed include: DNA **glycosylases**; AP endonucleases; **deoxyribophosphodiesterase**; DNA polymerases; and DNA ligase.

L9 ANSWER 9 OF 14 CAPLUS COPYRIGHT 2001 ACS
AN 1998:26665 CAPLUS
DN 128:189723
TI Characterization of Escherichia coli endonuclease VIII
AU Jiang, Dongyan; Hatahet, Zafer; Melamede, Robert J.; Kow, Yoke Wah; Wallace, Susan S.
CS Department of Microbiology and Molecular Genetics, The Markey Center for Molecular Genetics, University of Vermont, Burlington, VT, 05405, USA

SO J. Biol. Chem. (1997), 272(51), 32230-32239
CODEN: JBCHA3; ISSN: 0021-9258
PB American Society for Biochemistry and Molecular Biology
DT Journal
LA English
AB Escherichia coli endonuclease VIII (endo VIII) was identified as an enzyme that, like endonuclease III (endo III) removes radiolysis products of thymine including thymine glycol, dihydrothymine, .beta.-ureidoisobutyric acid, and urea from double-stranded plasmid or phage DNA and cleaves the DNA strand at abasic (AP) sites (Melamede, R. J., Hatahet, Z., Kow, Y. W., Ide, H., and Wallace, S. S. (1994) Biochem. 33, 1255-1264). Using apparently homogeneous endo VIII protein, we now show that endo VIII removes from double-stranded oligodeoxyribonucleotides the stable oxidative products of cytosine, 5-hydroxycytosine and 5-hydroxyuracil. Endo VIII cleaved the damage-contg. DNA strand by .beta.,.delta.-elimination as does formamidopyrimidine DNA **glycosylase** (Fpg). Like Fpg, endo VIII also excised the 5'-terminal deoxyribose phosphate from an endonuclease IV (endo IV) pre-incised AP site. Thus, in addn. to amino acid sequence homol. (Jiang, D., Hatahet, Z., Blaisdell, J., Melamede, R. J., and Wallace, S. S. (1997) J. Bacteriol. 179, 3773-3782), endo VIII shares a no. of catalytic properties with Fpg. In addn., endo VIII specifically bound to oligodeoxynucleotides contg. a reduced AP site with a stoichiometry of 1:1 for protein to DNA with an apparent equil. dissocn. const. of 3.9 nM. Like Fpg and endo III, the DNase I footprint was small with contact sites primarily on the damage-contg. strand; unlike Fpg and endo III, the DNA binding of endo VIII to DNA was asym., 3' to the reduced AP site.

L9 ANSWER 10 OF 14 MEDLINE DUPLICATE 2
AN 1998026845 MEDLINE
DN 98026845 PubMed ID: 9358166
TI The yeast 8-oxoguanine DNA **glycosylase** (Ogg1) contains a DNA **deoxyribophosphodiesterase** (dRpase) activity.
AU Sandigursky M; Yacoub A; Kelley M R; Xu Y; Franklin W A; Deutsch W A
CS Department of Radiology, Albert Einstein College of Medicine, Bronx, NY 10461, USA.
NC CA52025 (NCI)
ES07815 (NIEHS)
RR-09884 (NCRR)
+
SO NUCLEIC ACIDS RESEARCH, (1997 Nov 15) 25 (22) 4557-61.
Journal code: O8L; 0411011. ISSN: 0305-1048.
CY ENGLAND: United Kingdom
DT Journal; Article; (JOURNAL ARTICLE)
LA English
FS Priority Journals
EM 199801
ED Entered STN: 19980129
Last Updated on STN: 19980129
Entered Medline: 19980114
AB The yeast OGG1 gene was recently cloned and shown to encode a protein that possesses N-**glycosylase**/AP lyase activities for the repair of oxidatively damaged DNA at sites of 7,8-dihydro-8-oxoguanine (8-oxoguanine). Similar activities have been identified for Escherichia coli formamidopyrimidine-DNA **glycosylase** (Fpg) and Drosophila ribosomal protein S3. Both Fpg and S3 also contain a **deoxyribophosphodiesterase** (dRpase) activity that removes 2-deoxyribose-5-phosphate at an incised 5' apurinic/apyrimidinic (AP) sites via a beta-elimination reaction. Drosophila S3 also has an additional activity that removes trans-4-hydroxy-2-pentenal-5-phosphate at

a 3' incised AP site by a Mg2+-dependent hydrolytic mechanism. In view of the substrate similarities between Ogg1, Fpg and S3 at the level of base excision repair, we examined whether Ogg1 also contains dRpase activities.

A glutathione S-transferase fusion protein of Ogg1 was purified and subsequently found to efficiently remove sugar-phosphate residues at incised 5' AP sites. Activity was also detected for the Mg2+-dependent removal of trans -4-hydroxy-2-pentenal-5-phosphate at 3' incised AP sites and from intact AP sites. Previous studies have shown that DNA repair proteins that possess AP lyase activity leave an inefficient DNA terminus for subsequent DNA synthesis steps associated with base excision repair. However, the results presented here suggest that in the presence of MgCl2, Ogg1 can efficiently process 8-oxoguanine so as to leave a one nucleotide gap that can be readily filled in by a DNA polymerase, and importantly, does not therefore require additional enzymes to process trans -4-hydroxy-2-pentenal-5-phosphate left at a 3' terminus created by a beta-elimination catalyst.

L9 ANSWER 11 OF 14 MEDLINE DUPLICATE 3
AN 97238550 MEDLINE
DN 97238550 PubMed ID: 9132000
TI Evidence for a recombination-independent pathway for the repair of DNA interstrand cross-links based on a site-specific study with nitrogen mustard.
AU Berardini M; Mackay W; Loechler E L
CS Department of Biology, Boston University, Massachusetts 02215, USA.
NC CA49198 (NCI)
CA63396 (NCI)
SO BIOCHEMISTRY, (1997 Mar 25) 36 (12) 3506-13.
Journal code: A0G; 0370623. ISSN: 0006-2960.
CY United States
DT Journal; Article; (JOURNAL ARTICLE)
LA English
FS Priority Journals
EM 199704
ED Entered STN: 19970507
Last Updated on STN: 19970507
Entered Medline: 19970429
AB DNA-DNA interstrand cross-links are thought to be important for the cytotoxicity of many chemotherapeutic agents. To study this more definitively, adduct site-specific methods are used to construct a plasmid with a single nitrogen mustard interstrand cross-link (inter-HN2-pTZSV28).

Replication efficiency (RE = [colonies from (inter-HN2-pTZSV28)/(control with no cross-link)]) is approximately 0.3 following transformation into Escherichia coli, implying that the cross-link is repaired. The commonly accepted pathway for cross-link repair, which involves both nucleotide excision repair (NER) and recombination, is ruled out since RE is approximately 0.3 in a delta recA strain. Non-RecA-directed recombination such as copy-choice is also unlikely. However, NER is involved since RE was approximately 0.02 in strains deficient in NER. Base excision repair is not important since RE is approximately 0.3 in strains deficient in 3-methyladenine DNA **glycosylases** I and II, FAPY DNA **glycosylase**, both known apurinic/apyrimidinic endonucleases, or DNA **deoxyribophosphodiesterase**. Another hypothetical repair pathway hinging on a 5' --> 3' exonuclease activity is unlikely since RE is approximately 0.3 in cells deficient in either the 5' --> 3' exonuclease activities of DNA polymerase I, exonuclease VII, or RecJ. Thus, aside from NER, it is unclear what else participates in this recombination-independent repair pathway, although a pathway involing NER followed by replicative bypass of the lesion is the current working hypothesis. Psoralen interstrand cross-links appear not to be repairable by this second pathway, which may have implications for the relative

cytotoxicity of interstrand cross-links from different agents.

L9 ANSWER 12 OF 14 MEDLINE DUPLICATE 4
AN 94240228 MEDLINE
DN 94240228 PubMed ID: 8183999
TI DNA **deoxyribophosphodiesterase** and an activity that cleaves DNA containing thymine glycol adducts in Deinococcus radiodurans.
AU Mun C; Del Rowe J; Sandigursky M; Minton K W; Franklin W A
CS Department of Radiation Oncology, Albert Einstein College of Medicine, Bronx, New York 10461.
NC CA52025 (NCI)
GM39933 (NIGMS)
SO RADIATION RESEARCH, (1994 May) 138 (2) 282-5.
Journal code: QMP; 0401245. ISSN: 0033-7587.
CY United States
DT Journal; Article; (JOURNAL ARTICLE)
LA English
FS Priority Journals
EM 199406
ED Entered STN: 19940621
Last Updated on STN: 19940621
Entered Medline: 19940614
AB Deinococcus radiodurans is the most radioresistant bacterium discovered to date. Recently it has been demonstrated that this organism contains the DNA repair enzyme uracil-DNA **glycosylase** and an apurinic/apyrimidinic (AP) endonuclease that may function as part of a DNA base excision repair pathway. We demonstrate here that a DNA **deoxyribophosphodiesterase** activity that acts on incised AP sites in DNA to remove deoxyribose-phosphate groups is found in lysates prepared from D. radiodurans cells. The partially purified activity was found to be smaller in size than the E. coli dRpase activity, with an estimated molecular weight of 25-30 kDa. In addition, an activity that recognizes and cleaves DNA containing thymine glycols was also detected, with a molecular weight of approximately 30 kDa. This enzyme may be analogous to the thymine glycol **glycosylase**/AP lyase endonuclease III of E. coli.

L9 ANSWER 13 OF 14 MEDLINE DUPLICATE 5
AN 93291446 MEDLINE
DN 93291446 PubMed ID: 8513149
TI The repair of ionising radiation-induced damage to DNA.
AU Price A
CS Department of Radiotherapy, Royal Marsden Hospital, London, UK.
SO SEMINARS IN CANCER BIOLOGY, (1993 Apr) 4 (2) 61-71. Ref: 78
Journal code: A6Y; 9010218. ISSN: 1044-579X.
CY United States
DT Journal; Article; (JOURNAL ARTICLE)
General Review; (REVIEW)
(REVIEW, TUTORIAL)
LA English
FS Priority Journals
EM 199307
ED Entered STN: 19930806
Last Updated on STN: 19930806
Entered Medline: 19930722
AB Exposure of DNA to ionising radiation produces a variety of lesions. Double-strand breaks are repaired by recombinational pathways including a rapid single-strand annealing process which results in deletion of DNA sequences, and a double-strand break repair pathway which conserves genetic information. Single-strand breaks are repaired by the sequential action of a 3'-phosphodiesterase, DNA polymerase beta and a DNA ligase.

Damaged bases are excised by DNA **glycosylases**, and a single-base gap introduced, either by the action of an AP endonuclease activity and a DNA **deoxyribophosphodiesterase**, or by the AP lyase activity of the **glycosylase** and an AP endonuclease. Repair is completed by DNA polymerase beta and a DNA ligase.

L9 ANSWER 14 OF 14 MEDLINE DUPLICATE 6
AN 92195306 MEDLINE
DN 92195306 PubMed ID: 1549115
TI Generation of single-nucleotide repair patches following excision of uracil residues from DNA.
AU Dianov G; Price A; Lindahl T
CS Imperial Cancer Research Fund, Clare Hall Laboratories, South Mimms, Hertfordshire, United Kingdom.
SO MOLECULAR AND CELLULAR BIOLOGY, (1992 Apr) 12 (4) 1605-12.
Journal code: NGY; 8109087. ISSN: 0270-7306.
CY United States
DT Journal; Article; (JOURNAL ARTICLE)
LA English
FS Priority Journals
EM 199204
ED Entered STN: 19920509
Last Updated on STN: 19920509
Entered Medline: 19920422
AB The extent and location of DNA repair synthesis in a double-stranded oligonucleotide containing a single dUMP residue have been determined. Gently prepared Escherichia coli and mammalian cell extracts were employed for excision repair in vitro. The size of the resynthesized patch was estimated by restriction enzyme analysis of the repaired oligonucleotide. Following enzymatic digestion and denaturing gel electrophoresis, the extent of incorporation of radioactively labeled nucleotides in the vicinity of the lesion was determined by autoradiography. Cell extracts of E. coli and of human cell lines were shown to carry out repair mainly by replacing a single nucleotide. No significant repair replication on the 5' side of the lesion was observed. The data indicate that, after cleavage of the dUMP residue by uracil-DNA **glycosylase** and incision of the resultant apurinic-apyrimidinic site by an apurinic-apyrimidinic endonuclease activity, the excision step is catalyzed usually by a DNA **deoxyribophosphodiesterase** rather than by an exonuclease. Gap-filling and ligation complete the repair reaction. Experiments with enzyme inhibitors in mammalian cell extracts suggest that the repair replication step is catalyzed by DNA polymerase beta.

=> dup rem l4

PROCESSING COMPLETED FOR L4
L10 6 DUP REM L4 (0 DUPLICATES REMOVED)

=> d l10 bib ab kwic

L10 ANSWER 1 OF 6 CAPLUS COPYRIGHT 2001 ACS
AN 2000:490788 CAPLUS
DN 133:115872
TI Use of uracil-DNA glycosylase in genetic analysis by PCR and reverse blot hybridization
IN Matson, Robert S.
PA Beckman Coulter, Inc., USA
SO U.S., 21 pp.
CODEN: USXXAM

DT Patent
LA English
FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 6090553	A	20000718	US 1997-959853	19971029

AB The present invention relates to a process for detecting the presence of at least one specific nucleic acid sequence in a sample contg. a nucleic acid or a mixt. of nucleic acids by amplifying the nucleic acid using polymerase chain reaction, cleaving the **amplified** products with uracil **DNA glycosylase** to obtain short DNA segments and detecting the DNA fragments by using reverse blot hybridization. Anal. of specific nucleic acid sequences for deletion or mutation that causes a genetic disease, cystic fibrosis in particular, sequences from a pathogenic organism, or oncogene, is claimed. The method comprises labeling amplified products with dUTP and biotin. Use of sequence-specific oligonucleotide primer for PCR amplification and immobilized oligodeoxyribonucleotide probe for reverse blot hybridization is provided.

RE.CNT 10
RE
(1) Anon; WO 97/03210 1997 CAPLUS
(3) Hartley; US 5035996 1991 CAPLUS
(4) Hawkins; Nature Biotechnol 1997, V15, P803 CAPLUS.
(6) Liang; US 5599672 1997 CAPLUS
(7) Mullis; US 4683195 1987 CAPLUS
ALL CITATIONS AVAILABLE IN THE RE FORMAT

AB The present invention relates to a process for detecting the presence of at least one specific nucleic acid sequence in a sample contg. a nucleic acid or a mixt. of nucleic acids by amplifying the nucleic acid using polymerase chain reaction, cleaving the **amplified** products with uracil **DNA glycosylase** to obtain short DNA segments and detecting the DNA fragments by using reverse blot hybridization. Anal. of specific nucleic acid sequences for deletion or mutation that causes a genetic disease, cystic fibrosis in particular, sequences from a pathogenic organism, or oncogene, is claimed. The method comprises labeling amplified products with dUTP and biotin. Use of sequence-specific oligonucleotide primer for PCR amplification and immobilized oligodeoxyribonucleotide probe for reverse blot hybridization is provided.

IT 9003-98-9, DNase 59088-21-0, Uracil-DNA glycosylase 59088-22-1, 3-Methyladenine DNA glycosylase 61811-29-8, AP **endonuclease** 70356-40-0, DNA glycosylase 78783-53-6, FaPy-DNA glycosylase 123644-77-9, Pyrimidine hydrate-DNA glycosylase 149565-68-4, Thymine-mismatch DNA glycosylase
RL: BUU (Biological use, unclassified); BIOL (Biological study); USES (Uses)
(use of uracil-DNA glycosylase in genetic anal. by PCR and reverse blot hybridization)

=> d l10 1-6 bib ab kwic

L10 ANSWER 1 OF 6 CAPLUS COPYRIGHT 2001 ACS
AN 2000:490788 CAPLUS
DN 133:115872
TI Use of uracil-DNA glycosylase in genetic analysis by PCR and reverse blot hybridization
IN Matson, Robert S.
PA Beckman Coulter, Inc., USA
SO U.S., 21 pp.
CODEN: USXXAM
DT Patent

LA English
FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI US 6090553	A	20000718	US 1997-959853	19971029

AB The present invention relates to a process for detecting the presence of at least one specific nucleic acid sequence in a sample contg. a nucleic acid or a mixt. of nucleic acids by amplifying the nucleic acid using polymerase chain reaction, cleaving the **amplified** products with uracil **DNA glycosylase** to obtain short DNA segments and detecting the DNA fragments by using reverse blot hybridization. Anal. of specific nucleic acid sequences for deletion or mutation that causes a genetic disease, cystic fibrosis in particular, sequences from a pathogenic organism, or oncogene, is claimed. The method comprises labeling amplified products with dUTP and biotin. Use of sequence-specific oligonucleotide primer for PCR amplification and immobilized oligodeoxyribonucleotide probe for reverse blot hybridization is provided.

RE.CNT 10
RE
(1) Anon; WO 97/03210 1997 CAPLUS
(3) Hartley; US 5035996 1991 CAPLUS
(4) Hawkins; Nature Biotechnol 1997, V15, P803 CAPLUS
(6) Liang; US 5599672 1997 CAPLUS
(7) Mullis; US 4683195 1987 CAPLUS
ALL CITATIONS AVAILABLE IN THE RE FORMAT

AB The present invention relates to a process for detecting the presence of at least one specific nucleic acid sequence in a sample contg. a nucleic acid or a mixt. of nucleic acids by amplifying the nucleic acid using polymerase chain reaction, cleaving the **amplified** products with uracil **DNA glycosylase** to obtain short DNA segments and detecting the DNA fragments by using reverse blot hybridization. Anal. of specific nucleic acid sequences for deletion or mutation that causes a genetic disease, cystic fibrosis in particular, sequences from a pathogenic organism, or oncogene, is claimed. The method comprises labeling amplified products with dUTP and biotin. Use of sequence-specific oligonucleotide primer for PCR amplification and immobilized oligodeoxyribonucleotide probe for reverse blot hybridization is provided.

IT 9003-98-9, DNase 59088-21-0, Uracil-DNA glycosylase 59088-22-1, 3-Methyladenine DNA glycosylase 61811-29-8, AP **endonuclease** 70356-40-0, DNA glycosylase 78783-53-6, FaPy-DNA glycosylase 123644-77-9, Pyrimidine hydrate-DNA glycosylase 149565-68-4, Thymine-mismatch DNA glycosylase
RL: BUU (Biological use, unclassified); BIOL (Biological study); USES (Uses)
(use of uracil-DNA glycosylase in genetic anal. by PCR and reverse blot hybridization)

L10 ANSWER 2 OF 6 CAPLUS COPYRIGHT 2001 ACS
AN 1999:194293 CAPLUS
DN 130:233234
TI Method of amplifying cleavage products of mismatched DNA and RNA hybridization
IN Hsu, Ih-chang; Shih, James W.; Highsmith, William E., Jr.
PA University of Maryland, Baltimore, USA; United States Dept. of Health and Human Services; Highsmith, William E. Jr.
SO PCT Int. Appl., 42 pp.
CODEN: PIXXD2
DT Patent
LA English
FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE

PI WO 9913108 A1 19990318 WO 1998-US18776 19980910
W: AL, AM, AT, AU, AZ, BB, BG, BR, BY, CA, CH, CN, CZ, DE, DK, EE, ES, FI, GB, GE, HU, IL, IS, JP, KE, KG, KP, KR, KZ, LK, LR, LS, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, TJ, TM, TR, TT, UA, UG, US, UZ, VN, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM
RW: GH, GM, KE, LS, MW, SD, SZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG
AU 9893815 A1 19990329 AU 1998-93815 19980910
EP 1012342 A1 20000628 EP 1998-946900 19980910
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, FI
PRAI US 1997-58419 P 19970910
WO 1998-US18776 W 19980910
AB Claimed is a method for detecting predetd. nucleic acid sequences of a target mol. comprised of hybridizing a probe to the target with at least one base mismatch, reacting the complex with a DNA repair enzyme to remove mismatched bases, then cleaving at the abasic site to form a probe fragment with release of the probe fragment for detection and to allow secondary amplification. Detection of probe fragment products of base-pair mismatch cleavage indicate the presence and sequence of target DNA. Detection of the target is enhanced by amplification through recycling targets by maintaining an assay temp. between the m.p. of the target/probe DNA duplex and that of the target/product complex, in the presence of an amplifier comprising ammonium acetate or an amine deriv. (for example, diethylamine, piperidine or ammonium carbonate). Cleavage reduces the size of the duplex, thus lowering its m.p. The amplifier releases the target from the complex, thereby permitting further catalysis of cleavage and effectively amplifying the signal to be detected.
RE.CNT 1
RE
(1) Modrich; US 5556750 A 1996 CAPLUS
IT 52227-85-7, T4 **Endonuclease** V 60184-90-9, **Endonuclease** III 63363-78-0, **Endonuclease** IV 118390-70-8, **Endonuclease** VIII 133249-52-2, Thymine-**DNA glycosylase**
RL: ARG (Analytical reagent use); BUU (Biological use, unclassified); ANST (Analytical study); BIOL (Biological study); USES (Uses)
(method of **amplifying** cleavage products of mismatched DNA and RNA hybridization)
IT 61811-29-8, AP DNase 70356-40-0, **DNA glycosylase** 124834-14-6, **Endonuclease** MutY
RL: ARG (Analytical reagent use); BUU (Biological use, unclassified); ANST (Analytical study); BIOL (Biological study); USES (Uses)
(mismatch repair enzyme; method of **amplifying** cleavage products of mismatched DNA and RNA hybridization)

L10 ANSWER 3 OF 6 CAPLUS COPYRIGHT 2001 ACS
AN 1996:514802 CAPLUS
DN 125:159720
TI Detection of M. tuberculosis DNA using thermophilic strand displacement amplification
AU Spargo, C. A.; Fraiser, M. S.; Van Cleve, M.; Wright, D. J.; Nycz, C. M.; Spears, P. A.; Walker, G. T.
CS Department Molecular Biology, Becton Dickinson Research Center, Research Triangel Park, NC, 27709, USA
SO Mol. Cell. Probes (1996), 10(4), 247-256
CODEN: MCPRE6; ISSN: 0890-8508
DT Journal
LA English

AB Strand Displacement Amplification (SDA) is an isothermal, in vitro method of amplifying DNA that is based upon the combined action of a DNA polymerase and restriction enzyme. Previously, a form of SDA was developed which utilizes the exonuclease deficient Klenow fragment of E. coli polymerase I (exo-Klenow) and the restriction enzyme HincII to achieve 108-fold amplification in 2 h at 37.degree.C (Walker, G. T., 1993, PCR Methods and Applications 3; 1-6). A new thermophilic form of SDA is reported here which uses a restriction **endonuclease** from Bacillus stearothermophilus (BsoBI) and a 5'.fwdarw.3' exonuclease deficient polymerase from Bacillus caldotenax (eno-Bca). SDA was used to amplify DNA from Mycobacterium tuberculosis. An amplification factor of 1010-fold was achieved after 15 min of SDA at 60.degree.C. The new thermophilic system is much more specific than the previous mesophilic system as evidenced by a dramatic decrease in background amplification products. Thermophilic SDA was also optimized with dUTP substituted for TTP to enable amplicon decontamination using uracil-DNA glycosylase.

AB Strand Displacement Amplification (SDA) is an isothermal, in vitro method of amplifying DNA that is based upon the combined action of a DNA polymerase and restriction enzyme. Previously, a form of SDA was developed which utilizes the exonuclease deficient Klenow fragment of E. coli polymerase I (exo-Klenow) and the restriction enzyme HincII to achieve 108-fold amplification in 2 h at 37.degree.C (Walker, G. T., 1993, PCR Methods and Applications 3; 1-6). A new thermophilic form of SDA is reported here which uses a restriction **endonuclease** from Bacillus stearothermophilus (BsoBI) and a 5'.fwdarw.3' exonuclease deficient polymerase from Bacillus caldotenax (eno-Bca). SDA was used to amplify DNA from Mycobacterium tuberculosis. An amplification factor of 1010-fold was achieved after 15 min of SDA at 60.degree.C. The new thermophilic system is much more specific than the previous mesophilic system as evidenced by a dramatic decrease in background amplification products. Thermophilic SDA was also optimized with dUTP substituted for TTP to enable amplicon decontamination using uracil-DNA glycosylase.

IT Bacillus caldotenax
Bacillus stearothermophilus
(new thermophilic form of strand displacement amplification is reported here which uses a restriction **endonuclease** from Bacillus stearothermophilus (BsoBI) and a 5'.fwdarw.3' exonuclease deficient polymerase from Bacillus caldotenax (eno-Bca))

IT 37228-74-3, Exonuclease
RL: BSU (Biological study, unclassified); BIOL (Biological study)
(-deficient polymerase; new thermophilic form of strand displacement amplification uses a restriction **endonuclease** from Bacillus stearothermophilus (BsoBI) and a 5'.fwdarw.3' exonuclease deficient polymerase from Bacillus caldotenax (eno-Bca))

IT 9012-90-2, DNA polymerase 81295-06-9, Restriction **endonuclease** BsoBI
RL: BAC (Biological activity or effector, except adverse); BUU (Biological use, unclassified); BIOL (Biological study); USES (Uses)
(new thermophilic form of strand displacement amplification is reported here which uses a restriction **endonuclease** from Bacillus stearothermophilus (BsoBI) and a 5'.fwdarw.3' exonuclease deficient polymerase from Bacillus caldotenax (eno-Bca))

IT 59088-21-0, Uracil-**DNA glycosylase**
RL: BAC (Biological activity or effector, except adverse); BUU (Biological use, unclassified); BIOL (Biological study); USES (Uses)
(thermophilic strand displacement **amplification** was optimized with dUTP substituted for TTP to enable amplicon decontamination using uracil-DNA glycosylase)

L10 ANSWER 4 OF 6 CAPLUS COPYRIGHT 2001 ACS
AN 1995:661047 CAPLUS
DN 123:76406
TI Reduction of nonspecific nucleic acid amplification using dUTP and DNA uracil glycosylase
IN Gelfand, David H.; Kwok, Shirley Y.; Sninsky, John J.
PA Hoffmann-La Roche Inc., USA
SO U.S., 23 pp. Cont.-in-part of U.S. Ser. No. 557,517, abandoned.
CODEN: USXXAM
DT Patent
LA English
FAN.CNT 27

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	US 5418149	A	19950523	US 1993-960362	19930105
	CA 2087724	AA	19920125	CA 1991-2087724	19910723
	WO 9201814	A2	19920206	WO 1991-US5210	19910723
	WO 9201814	A3	19920514		
	W: AU, CA, JP, US				
	RW: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LU, NL, SE				
	US 5618703	A	19970408	US 1994-199509	19940222
	US 5641864	A	19970624	US 1994-311612	19940922
	US 5693517	A	19971202	US 1995-384817	19950202
	US 5561058	A	19961001	US 1995-449050	19950524
	US 5795762	A	19980818	US 1995-458819	19950602
PRAI	US 1990-557517	B2	19900724		
	US 1990-609157	B2	19901102		
	WO 1991-US5210	W	19910723		
	US 1986-899241	B2	19860822		
	US 1987-63509	A2	19870617		
	US 1988-143441	B2	19880112		
	US 1989-455611	A2	19891222		
	US 1989-455967	B2	19891222		
	US 1990-523394	A2	19900515		
	US 1990-585471	B2	19900920		
	US 1990-590213	B2	19900928		
	US 1990-590466	A2	19900928		
	US 1990-590490	B2	19900928		
	US 1991-746121	B1	19910815		
	US 1992-880478	B2	19920506		
	US 1993-960362	A2	19930105		
	US 1993-977434	A1	19930223		
	US 1993-82182	A1	19930624		
	US 1993-86483	B1	19930701		
	US 1994-199509	A1	19940222		
	US 1995-384817	B3	19950202		
	US 1996-899241	B2	19960822		

AB Improved methods for amplifying nucleic acids can reduce nonspecific amplification and minimize the effects of contamination of nucleic acid amplification reaction assays due to amplified product from previous amplifications. The methods involve the introduction of unconventional nucleotide bases into the amplification reaction products and treating the products by enzymic (e.g., glycosylases) and/or physicochem. means to render the product incapable of acting as a template for subsequent amplifications. An improved purifn. of recombinant protein from host is also provided by elimination of contaminant nucleic acids by this method. Thus, PCR amplification of HIV or HTLV was carried out with the incorporation of dUTP and treatment with DNA-uracil glycosylase (UNG). In the absence of UNG, with or without preincubation, substantial amts. of nonspecific products were amplified in both systems, whereas with the incorporation of UNG, nonspecific amplifications were dramatically reduced. PCR cloning, high level expression of UNG in Escherichia coli, and purifn. procedures provided very pure (>99%) enzyme prepns. without

single-strand or double-strand **endonuclease** activities.

AB Improved methods for amplifying nucleic acids can reduce nonspecific amplification and minimize the effects of contamination of nucleic acid amplification reaction assays due to amplified product from previous amplifications. The methods involve the introduction of unconventional nucleotide bases into the amplification reaction products and treating the products by enzymic (e.g., glycosylases) and/or physicochem. means to render the product incapable of acting as a template for subsequent amplifications. An improved purifn. of recombinant protein from host is also provided by elimination of contaminant nucleic acids by this method. Thus, PCR amplification of HIV or HTLV was carried out with the incorporation of dUTP and treatment with DNA-uracil glycosylase (UNG). In the absence of UNG, with or without preincubation, substantial amts. of nonspecific products were amplified in both systems, whereas with the incorporation of UNG, nonspecific amplifications were dramatically reduced. PCR cloning, high level expression of UNG in Escherichia coli, and purifn. procedures provided very pure (>99%) enzyme prepns. without single-strand or double-strand **endonuclease** activities.

IT 59088-21-0P, Uracil-**DNA glycosylase**
RL: BMF (Bioindustrial manufacture); BUU (Biological use, unclassified); PUR (Purification or recovery); BIOL (Biological study); PREP (Preparation); USES (Uses)
(redn. of nonspecific nucleic acid **amplification** using dUTP and DNA uracil glycosylase)

IT 890-38-0, Deoxyinosine 1173-82-6, DUTP 68247-62-1, Hypoxanthine-**DNA glycosylase** 70356-40-0, **DNA glycosylase**
RL: BUU (Biological use, unclassified); BIOL (Biological study); USES (Uses)
(redn. of nonspecific nucleic acid **amplification** using dUTP and DNA uracil glycosylase)

L10 ANSWER 5 OF 6 CAPLUS COPYRIGHT 2001 ACS
AN 1993:118280 CAPLUS
DN 118:118280
TI Process for controlling contamination of nucleic acid amplification reactions
IN Hartley, James L.; Berninger, Mark
PA Life Technologies Inc., USA
SO Eur. Pat. Appl., 18 pp.
CODEN: EPXXDW
DT Patent
LA English
FAN.CNT 3

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	EP 522884	A1	19930113	EP 1992-306396	19920713
	EP 522884	B1	19971029		
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, MC, NL, PT, SE				
	CA 2073298	AA	19930113	CA 1992-2073298	19920707
	JP 06090755	A2	19940405	JP 1992-183440	19920710
	JP 08011070	B4	19960207		
	AT 159764	E	19971115	AT 1992-306396	19920713
	ES 2109983	T3	19980201	ES 1992-306396	19920713
	US 5683896	A	19971104	US 1994-221465	19940401
	US 5945313	A	19990831	US 1997-962701	19971103
PRAI	US 1991-728874		19910712		
	US 1989-360120		19890601		
	US 1989-401840		19890901		
	US 1990-633389		19901231		
	US 1993-79835		19930622		
	US 1994-221465		19940401		

AB A method of nucleic acid amplification which leads to incorporation of

unusual nucleotides into the amplification products (e.g. deoxyuridine into DNA) is claimed. This procedure renders amplified nucleic acids distinguishable from naturally occurring nucleic acids and can be used to reduce carryover contamination. In the case of deoxyuridine-contg. DNA, the sample is treated with uracil DNA glycosylase. The method comprises use of unusual nucleotide during the amplification reaction, or use of unusual nucleotide-contg. primers.

ST nucleic acid amplification carryover contamination; deoxyuridine PCR **amplification** uracil **DNA glycosylase**

IT 63363-78-0, **Endonuclease** IV
RL: USES (Uses)
(uridine-contg. DNA digestion with uracil **DNA glycosylase** and, in method for prevention of carryover contamination in DNA **amplification** reactions)

L10 ANSWER 6 OF 6 CAPLUS COPYRIGHT 2001 ACS
AN 1992:209128 CAPLUS
DN 116:209128
TI Minimization of non-specific amplification during in vitro nucleic acid amplification with modified nucleic acid bases
IN Sninsky, John J.; Gelfand, David H.; Kwok, Shirley Y.
PA Cetus Corp., USA
SO PCT Int. Appl., 55 pp.
CODEN: PIXXD2
DT Patent
LA English
FAN.CNT 27

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 9201814	A2	19920206	WO 1991-US5210	19910723
	WO 9201814	A3	19920514		
	W: AU, CA, JP, US				
	RW: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LU, NL, SE				
	CA 2087724	AA	19920125	CA 1991-2087724	19910723
	AU 9185327	A1	19920218	AU 1991-85327	19910723
	AU 665338	B2	19960104		
	EP 540693	A1	19930512	EP 1991-916353	19910723
	EP 540693	B1	19990120		
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE				
	JP 06501612	T2	19940224	JP 1991-515604	19910723
	AT 176002	E	19990215	AT 1991-916353	19910723
	ES 2128323	T3	19990516	ES 1991-916353	19910723
	US 5418149	A	19950523	US 1993-960362	19930105
	US 5618703	A	19970408	US 1994-199509	19940222
	US 5641864	A	19970624	US 1994-311612	19940922
	US 5795762	A	19980818	US 1995-458819	19950602
PRAI	US 1990-557517	A	19900724		
	US 1990-609157	A	19901102		
	US 1986-899241	B2	19860822		
	US 1987-63509	A2	19870617		
	US 1988-143441	B2	19880112		
	US 1989-455611	A2	19891222		
	US 1989-455967	B2	19891222		
	US 1990-523394	A2	19900515		
	US 1990-585471	B2	19900920		
	US 1990-590213	B2	19900928		
	US 1990-590466	A2	19900928		
	US 1990-590490	B2	19900928		
	WO 1991-US5210	A	19910723		
	US 1991-746121	B1	19910815		
	US 1993-977434	A1	19930223		
	US 1993-82182	A1	19930624		
	US 1994-199509	A1	19940222		

AB A method for reducing nonspecific amplification in a primer-based amplification reaction is described. A modified nucleotide and a

glycosylase specific for the nucleotide are incorporated into the amplification reaction. The reaction mixt. is incubated at a temp. below the denaturation temp. of the glycosylase and below the temp. for specific hybridization of the primers in order to remove the modified bases incorporated into nonspecific amplification products. The glycosylase is then inactivated, and the amplification process is begun. A method for manuf. of proteins that are not contaminated with nucleic acids is also described. A glycosylase-deficient host is transformed with a desired gene and cultured under conditions that permit incorporation of a modified nucleotide in the nucleic acids. The isolated desired protein is incubated with a nucleoside glycosylase to degrade contaminating nucleic acids.

IT 59088-21-0, Uracil **DNA glycosylase**
RL: USES (Uses)
(prevention of nonspecific **amplification** in nucleic acid **amplification** reactions in relation to)

IT 61811-29-8, AP **endonuclease** 68247-62-1, Hypoxanthine **DNA glycosylase** 89287-37-6, 3-Methyladenine **DNA glycosylase** I 89287-38-7, 3-Methyladenine **DNA glycosylase** II
RL: USES (Uses)
(prevention of nonspecific **amplification** in nucleic acid **amplification** reactions using, incorporation and hydrolysis of modified bases in relation to)

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LABELC.DWPI,EPAB,JPAB,USPT.	1
LABELD.DWPI,EPAB,JPAB,USPT.	26
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USPT,JPAB,EPAB,DWPI	DNA glycosylase near5 amplif$	27	L2
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☐ 1. Document ID: US 6090553 A

L3: Entry 1 of 6 File: USPT Jul 18, 2000

US-PAT-NO: 6090553
DOCUMENT-IDENTIFIER: US 6090553 A

TITLE: Use of uracil-DNA glycosylase in genetic analysis

DATE-ISSUED: July 18, 2000

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Matson; Robert S.	Orange	CA	N/A	N/A

US-CL-CURRENT: 435/6; 435/183, 435/196, 435/91.1, 435/91.2

Full | Title | Citation | Front | Review | Classification | Date | Reference | Claims | KWIC | Draw Desc | Image

☐ 2. Document ID: US 5952176 A

L3: Entry 2 of 6 File: USPT Sep 14, 1999

US-PAT-NO: 5952176
DOCUMENT-IDENTIFIER: US 5952176 A

TITLE: Glycosylase mediated detection of nucleotide sequences at candidate loci

DATE-ISSUED: September 14, 1999

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
McCarthy; Thomas Valentine	Montenotte	N/A	N/A	IEX
Vaughan; Patrick Martin	Frankfield	N/A	N/A	IEX

US-CL-CURRENT: 435/6; 435/91.2

Full | Title | Citation | Front | Review | Classification | Date | Reference | Claims | KWIC | Draw Desc | Image

☐ 3. Document ID: US 5945313 A

L3: Entry 3 of 6 File: USPT Aug 31, 1999

US-PAT-NO: 5945313
DOCUMENT-IDENTIFIER: US 5945313 A

TITLE: Process for controlling contamination of nucleic acid amplification reactions

DATE-ISSUED: August 31, 1999

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Hartley; James L.	Frederick	MD	N/A	N/A
Berninger; Mark	Gaithersburg	MD	N/A	N/A

US-CL-CURRENT: 435/91.2; 435/194, 435/195, 435/6, 435/810

Full | Title | Citation | Front | Review | Classification | Date | Reference | Claims | KWIC | Draw Desc | Image

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☐ 4. Document ID: US 5683896 A

L3: Entry 4 of 6 File: USPT Nov 4, 1997

US-PAT-NO: 5683896
DOCUMENT-IDENTIFIER: US 5683896 A

TITLE: Process for controlling contamination of nucleic acid amplification reactions

DATE-ISSUED: November 4, 1997

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Hartley; James L.	Frederick	MD	N/A	N/A
Berninger; Mark	Gaithersburg	MD	N/A	N/A

US-CL-CURRENT: 435/91.1; 435/200, 435/6, 435/91.2

Full | Title | Citation | Front | Review | Classification | Date | Reference | Claims | KWIC | Draw Desc | Image

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☐ 5. Document ID: US 5418149 A

L3: Entry 5 of 6 File: USPT May 23, 1995

US-PAT-NO: 5418149
DOCUMENT-IDENTIFIER: US 5418149 A

TITLE: Reduction of non-specific amplification glycosylase using DUTP and DNA uracil

DATE-ISSUED: May 23, 1995

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Gelfand; David H.	Oakland	CA	N/A	N/A
Kwok; Shirley Y.	San Ramon	CA	N/A	N/A
Sninsky; John J.	El Sobrante	CA	N/A	N/A

US-CL-CURRENT: 435/91.2; 435/6

Full | Title | Citation | Front | Review | Classification | Date | Reference | Claims | KWIC | Draw Desc | Image

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☐ 6. Document ID: US 5035996 A

L3: Entry 6 of 6 File: USPT Jul 30, 1991

US-PAT-NO: 5035996
DOCUMENT-IDENTIFIER: US 5035996 A

TITLE: Process for controlling contamination of nucleic acid amplification reactions

DATE-ISSUED: July 30, 1991

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Hartley; James L.	Frederick	MD	N/A	N/A

US-CL-CURRENT: 435/6; 435/200, 435/227, 435/91.2, 435/91.21

Full | Title | Citation | Front | Review | Classification | Date | Reference | Claims | KWIC | Draw Desc | Image

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☐ 1. Document ID: US 6236945 B1

L2: Entry 1 of 27 File: USPT May 22, 2001

US-PAT-NO: 6236945
DOCUMENT-IDENTIFIER: US 6236945 B1

TITLE: Apparatus and method for the generation, separation, detection, and recognition of biopolymer fragments

DATE-ISSUED: May 22, 2001

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Simpson; John W.	Branford	CT	N/A	N/A
Rothberg; Jonathan Marc	Guilford	CT	N/A	N/A
Went; Gregory T.	Madison	CT	N/A	N/A

US-CL-CURRENT: 702/20; 435/6, 435/91.1, 436/800, 436/94, 536/23.1, 536/24.3, 536/24.33

Full | Title | Citation | Front | Review | Classification | Date | Reference | Claims | KWIC | Draw Desc | Image

☐ 2. Document ID: US 6218121 B1

L2: Entry 2 of 27 File: USPT Apr 17, 2001

US-PAT-NO: 6218121
DOCUMENT-IDENTIFIER: US 6218121 B1

TITLE: Apparatus and method for the generation, separation, detection, and recognition of biopolymer fragments

DATE-ISSUED: April 17, 2001

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Simpson; John W.	Branford	CT	N/A	N/A
Rothberg; Jonathan Marc	Guilford	CT	N/A	N/A
Went; Gregory T.	Madison	CT	N/A	N/A

US-CL-CURRENT: 435/6; 435/89, 435/91.2, 435/91.4

Full | Title | Citation | Front | Review | Classification | Date | Reference | Claims | KWIC | Draw Desc | Image

☐ 3. Document ID: US 6197557 B1

L2: Entry 3 of 27 File: USPT Mar 6, 2001

US-PAT-NO: 6197557
DOCUMENT-IDENTIFIER: US 6197557 B1

TITLE: Compositions and methods for analysis of nucleic acids

DATE-ISSUED: March 6, 2001

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Makarov; Vladimir L.	Ann Arbor	MI	N/A	N/A
Langmore; John P.	Ann Arbor	MI	N/A	N/A

US-CL-CURRENT: 435/91.2; 435/6, 536/23.1, 536/24.3

Full | Title | Citation | Front | Review | Classification | Date | Reference | Claims | KWIC | Draw Desc | Image

☐ 4. Document ID: US 6150105 A

L2: Entry 4 of 27 File: USPT Nov 21, 2000

US-PAT-NO: 6150105
DOCUMENT-IDENTIFIER: US 6150105 A

TITLE: Methods of screening nucleic acids for nucleotide variations

DATE-ISSUED: November 21, 2000

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Dahlhauser; Paul A.	Nashville	TN	N/A	N/A

US-CL-CURRENT: 435/6; 435/91.2, 536/24.3

Full | Title | Citation | Front | Review | Classification | Date | Reference | Claims | KWIC | Draw Desc | Image

☐ 5. Document ID: US 6090553 A

L2: Entry 5 of 27 File: USPT Jul 18, 2000

US-PAT-NO: 6090553
DOCUMENT-IDENTIFIER: US 6090553 A

TITLE: Use of uracil-DNA glycosylase in genetic analysis

DATE-ISSUED: July 18, 2000

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Matson; Robert S.	Orange	CA	N/A	N/A

US-CL-CURRENT: 435/6; 435/183, 435/196, 435/91.1, 435/91.2

Full | Title | Citation | Front | Review | Classification | Date | Reference | Claims | KWIC | Draw Desc | Image

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☐ 6. Document ID: US 6017434 A

L2: Entry 6 of 27 File: USPT Jan 25, 2000

US-PAT-NO: 6017434
DOCUMENT-IDENTIFIER: US 6017434 A

TITLE: Apparatus and method for the generation, separation, detection, and recognition of biopolymer fragments

DATE-ISSUED: January 25, 2000

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Simpson; John W.	Branford	CT	N/A	N/A
Rothberg; Jonathan Marc	Guilford	CT	N/A	N/A
Went; Gregory T.	Madison	CT	N/A	N/A

US-CL-CURRENT: 204/612; 204/466, 204/606, 204/616, 356/344, 435/287.2, 435/287.3

Full | Title | Citation | Front | Review | Classification | Date | Reference | Claims | KWIC | Draw Desc | Image

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☐ 7. Document ID: US 5993634 A

L2: Entry 7 of 27 File: USPT Nov 30, 1999

US-PAT-NO: 5993634
DOCUMENT-IDENTIFIER: US 5993634 A

TITLE: Apparatus and method for the generation, separation, detection, and recognition of biopolymer fragments

DATE-ISSUED: November 30, 1999

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Simpson; John W.	Madison	CT	N/A	N/A
Rothberg; Jonathan M.	Branford	CT	N/A	N/A
Went; Gregory T.	Madison	CT	N/A	N/A

US-CL-CURRENT: 204/612; 204/450, 204/451, 204/452, 204/453, 204/455, 204/600, 204/601, 204/603, 204/605

Full | Title | Citation | Front | Review | Classification | Date | Reference | Claims | KWIC | Draw Desc | Image

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☐ 8. Document ID: US 5985569 A

L2: Entry 8 of 27 File: USPT Nov 16, 1999

US-PAT-NO: 5985569
DOCUMENT-IDENTIFIER: US 5985569 A

TITLE: Primers for amplification of a genus specific sequence of the mycobacterium 16S rRNA gene

DATE-ISSUED: November 16, 1999

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Foxall; Paul A.	San Mateo	CA	N/A	N/A
Kumar; Harish	Tarrytown	NY	N/A	N/A

US-CL-CURRENT: 435/6; 435/91.2, 536/23.1, 536/24.3

Full | Title | Citation | Front | Review | Classification | Date | Reference | Claims | KWIC | Draw Desc | Image

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☐ 9. Document ID: US 5952176 A

L2: Entry 9 of 27 File: USPT Sep 14, 1999

US-PAT-NO: 5952176
DOCUMENT-IDENTIFIER: US 5952176 A

TITLE: Glycosylase mediated detection of nucleotide sequences at candidate loci

DATE-ISSUED: September 14, 1999

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
McCarthy; Thomas Valentine	Montenotte	N/A	N/A	IEX
Vaughan; Patrick Martin	Frankfield	N/A	N/A	IEX

US-CL-CURRENT: 435/6; 435/91.2

Full | Title | Citation | Front | Review | Classification | Date | Reference | Claims | KWIC | Draw Desc | Image

☐ 10. Document ID: US 5945313 A

L2: Entry 10 of 27 File: USPT Aug 31, 1999

US-PAT-NO: 5945313
DOCUMENT-IDENTIFIER: US 5945313 A

TITLE: Process for controlling contamination of nucleic acid amplification reactions

DATE-ISSUED: August 31, 1999

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Hartley; James L.	Frederick	MD	N/A	N/A
Berninger; Mark	Gaithersburg	MD	N/A	N/A

US-CL-CURRENT: 435/91.2; 435/194, 435/195, 435/6, 435/810

Full | Title | Citation | Front | Review | Classification | Date | Reference | Claims | KWIC | Draw Desc | Image

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Term	Documents
DNA.DWPI,EPAB,JPAB,USPT.	102105
DNAS.DWPI,EPAB,JPAB,USPT.	10876
GLYCOSYLASE.DWPI,EPAB,JPAB,USPT.	522
GLYCOSYLASES.DWPI,EPAB,JPAB,USPT.	89
AMPLIF$	0
AMPLIF.DWPI,EPAB,JPAB,USPT.	68
AMPLIFABLE.DWPI,EPAB,JPAB,USPT.	2
AMPLIFACATION.DWPI,EPAB,JPAB,USPT.	2
AMPLIFACTION.DWPI,EPAB,JPAB,USPT.	6
AMPLIFACTIONS:.DWPI,EPAB,JPAB,USPT.	1
(DNA GLYCOSYLASE NEAR5 AMPLIF$).USPT,JPAB,EPAB,DWPI.	27

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☐ 11. Document ID: US 5763186 A

L2: Entry 11 of 27 File: USPT Jun 9, 1998

US-PAT-NO: 5763186
DOCUMENT-IDENTIFIER: US 5763186 A

TITLE: Use of antisense oligomers in a process for controlling contamination in nucleic acid amplification reactions

DATE-ISSUED: June 9, 1998

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Ludtke; Douglas N.	Walpole	MA	N/A	N/A
Monahan; John E.	Walpole	MA	N/A	N/A
Unger; John T.	Medfield	MA	N/A	N/A

US-CL-CURRENT: 435/6; 435/235.1, 435/91.2, 536/24.1

Full | Title | Citation | Front | Review | Classification | Date | Reference | Claims | KWIC | Draw Desc | Image

☐ 12. Document ID: US 5756702 A

L2: Entry 12 of 27 File: USPT May 26, 1998

US-PAT-NO: 5756702
DOCUMENT-IDENTIFIER: US 5756702 A

TITLE: Detection of nucleic acids in cells by thermophilic strand displacement amplification

DATE-ISSUED: May 26, 1998

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Lohman; Kenton L.	San Jose	CA	N/A	N/A
Ostrerova; Natalie V.	Mountain View	CA	N/A	N/A
Van Cleve; Mark	Durham	NC	N/A	N/A
Reid; Robert Alan	Durham	NC	N/A	N/A

US-CL-CURRENT: 536/24.33; 536/23.1

Full | Title | Citation | Front | Review | Classification | Date | Reference | Claims | KWIC | Draw Desc | Image

☐ 13. Document ID: US 5753186 A

L2: Entry 13 of 27 File: USPT May 19, 1998

US-PAT-NO: 5753186
DOCUMENT-IDENTIFIER: US 5753186 A

TITLE: Reaction tube with a penetrable membrane to minimize contamination

DATE-ISSUED: May 19, 1998

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Hanley; Kathleen A.	Gurnee	IL	N/A	N/A
Hofferbert; A. David	Grafton	WI	N/A	N/A
Lee; Helen H.	Lake Forest	IL	N/A	N/A
Pepe; Curtis J.	McHenry	IL	N/A	N/A
Perko; Timothy J.	St. Louis	MO	N/A	N/A
Zurek; Thomas F.	River Forest	IL	N/A	N/A

US-CL-CURRENT: 422/101; 422/100, 422/102, 435/6, 435/91.2

Full | Title | Citation | Front | Review | Classification | Date | Reference | Claims | KWIC | Draw Desc | Image

☐ 14. Document ID: US 5733752 A

L2: Entry 14 of 27 File: USPT Mar 31, 1998

US-PAT-NO: 5733752
DOCUMENT-IDENTIFIER: US 5733752 A

TITLE: Detection of nucleic acids in cells by thermophilic strand displacement amplification

DATE-ISSUED: March 31, 1998

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Lohman; Kenton L.	San Jose	CA	N/A	N/A
Ostrerova; Natalie V.	Mountain View	CA	N/A	N/A
Cleve; Mark Van	Durham	NC	N/A	N/A
Reid; Robert Alan	Durham	NC	N/A	N/A

US-CL-CURRENT: 435/91.2; 435/5, 435/6, 536/24.3

Full | Title | Citation | Front | Review | Classification | Date | Reference | Claims | KWIC | Draw Desc | Image

☐ 15. Document ID: US 5693517 A

L2: Entry 15 of 27 File: USPT Dec 2, 1997

US-PAT-NO: 5693517
DOCUMENT-IDENTIFIER: US 5693517 A

TITLE: Reagents and methods for coupled high temperature reverse transcription and polymerase chain reactions

DATE-ISSUED: December 2, 1997

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Gelfand; David H.	Oakland	CA	N/A	N/A
Myers; Thomas W.	Alameda	CA	N/A	N/A
Sigua; Christopher L.	Antioch	CA	N/A	N/A

US-CL-CURRENT: 435/193; 436/8, 436/86, 536/24.3, 536/24.33

Full | Title | Citation | Front | Review | Classification | Date | Reference | Claims | KWIC | Draw Desc | Image

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☐ 16. Document ID: US 5683896 A

L2: Entry 16 of 27 File: USPT Nov 4, 1997

US-PAT-NO: 5683896
DOCUMENT-IDENTIFIER: US 5683896 A

TITLE: Process for controlling contamination of nucleic acid amplification reactions

DATE-ISSUED: November 4, 1997

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Hartley; James L.	Frederick	MD	N/A	N/A
Berninger; Mark	Gaithersburg	MD	N/A	N/A

US-CL-CURRENT: 435/91.1; 435/200, 435/6, 435/91.2

Full | Title | Citation | Front | Review | Classification | Date | Reference | Claims | KWIC | Draw Desc | Image

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☐ 17. Document ID: US 5641864 A

L2: Entry 17 of 27 File: USPT Jun 24, 1997

US-PAT-NO: 5641864
DOCUMENT-IDENTIFIER: US 5641864 A

TITLE: Kits for high temperature reverse transcription of RNA

DATE-ISSUED: June 24, 1997

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Gelfand; David H.	Oakland	CA	N/A	N/A

US-CL-CURRENT: 530/350; 435/6, 536/24.33

Full | Title | Citation | Front | Review | Classification | Date | Reference | Claims | KWIC | Draw Desc | Image

☐ 18. Document ID: US 5631147 A

L2: Entry 18 of 27 File: USPT May 20, 1997

US-PAT-NO: 5631147
DOCUMENT-IDENTIFIER: US 5631147 A

TITLE: Detection of nucleic acids in cells by thermophilic strand displacement amplification

DATE-ISSUED: May 20, 1997

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Lohman; Kenton L.	San Jose	CA	N/A	N/A
Ostrerova; Natalie V.	Mountain View	CA	N/A	N/A
Cleve; Mark V.	Durham	NC	N/A	N/A
Reid; Robert A.	Durham	NC	N/A	N/A

US-CL-CURRENT: 435/91.2; 435/6

Full | Title | Citation | Front | Review | Classification | Date | Reference | Claims | KWIC | Draw Desc | Image

☐ 19. Document ID: US 5618703 A

L2: Entry 19 of 27 File: USPT Apr 8, 1997

US-PAT-NO: 5618703
DOCUMENT-IDENTIFIER: US 5618703 A

TITLE: Unconventional nucleotide substitution in temperature selective RT-PCR

DATE-ISSUED: April 8, 1997

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Gelfand; David H.	Oakland	CA	N/A	N/A
Myers; Thomas W.	Emeryville	CA	N/A	N/A

US-CL-CURRENT: 435/91.2; 435/6, 435/91.51

Full | Title | Citation | Front | Review | Classification | Date | Reference | Claims | KWIC | Draw Desc | Image

☐ 20. Document ID: US 5604101 A

L2: Entry 20 of 27 File: USPT Feb 18, 1997

US-PAT-NO: 5604101
DOCUMENT-IDENTIFIER: US 5604101 A

TITLE: Method of minimizing contamination in amplification reactions using a reaction tube with a penetrable membrane

DATE-ISSUED: February 18, 1997

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Hanley; Kathleen A.	Gurnee	IL	N/A	N/A
Hofferbert; A. David	Grafton	WI	N/A	N/A
Lee; Helen H.	Lake Forest	IL	N/A	N/A
Pepe; Curtis J.	McHenry	IL	N/A	N/A
Zurek; Thomas F.	River Forest	IL	N/A	N/A

US-CL-CURRENT: 435/6; 435/91.2

Full | Title | Citation | Front | Review | Classification | Date | Reference | Claims | KWIC | Draw Desc | Image

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☐ 21. Document ID: US 5561058 A

L2: Entry 21 of 27 File: USPT Oct 1, 1996

US-PAT-NO: 5561058
DOCUMENT-IDENTIFIER: US 5561058 A

TITLE: Methods for coupled high temperatures reverse transcription and polymerase chain reactions

DATE-ISSUED: October 1, 1996

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Gelfand; David H.	Oakland	CA	N/A	N/A
Myers; Thomas W.	Alameda	CA	N/A	N/A
Sigua; Christopher L.	Antioch	CA	N/A	N/A

US-CL-CURRENT: 435/91.2; 435/6, 435/91.1, 435/91.21, 435/91.51

Full | Title | Citation | Front | Review | Classification | Date | Reference | Claims | KWIC | Draw Desc | Image

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☐ 22. Document ID: US 5418149 A

L2: Entry 22 of 27 File: USPT May 23, 1995

US-PAT-NO: 5418149
DOCUMENT-IDENTIFIER: US 5418149 A

TITLE: Reduction of non-specific amplification glycosylase using DUTP and DNA uracil

DATE-ISSUED: May 23, 1995

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Gelfand; David H.	Oakland	CA	N/A	N/A
Kwok; Shirley Y.	San Ramon	CA	N/A	N/A
Sninsky; John J.	El Sobrante	CA	N/A	N/A

US-CL-CURRENT: 435/91.2; 435/6

Full | Title | Citation | Front | Review | Classification | Date | Reference | Claims | KWIC | Draw Desc | Image

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☐ 23. Document ID: US 5035996 A

L2: Entry 23 of 27 File: USPT Jul 30, 1991

US-PAT-NO: 5035996
DOCUMENT-IDENTIFIER: US 5035996 A

TITLE: Process for controlling contamination of nucleic acid amplification reactions

DATE-ISSUED: July 30, 1991

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Hartley; James L.	Frederick	MD	N/A	N/A

US-CL-CURRENT: 435/6; 435/200, 435/227, 435/91.2, 435/91.21

Full | Title | Citation | Front | Review | Classification | Date | Reference | Claims | KWIC | Draw Desc | Image

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☐ 24. Document ID: US 6090553 A

L2: Entry 24 of 27 File: DWPI Jul 18, 2000

DERWENT-ACC-NO: 2000-531416
DERWENT-WEEK: 200048

TITLE: Detecting specific nucleic acid sequence in sample containing nucleic acids involves amplifying nucleic acid, cleaving amplified products with uracil-DNA glycosylase to obtain DNA segments and detecting segments

INVENTOR: MATSON, R S

PRIORITY-DATA: 1997US-0959853 (October 29, 1997)

PATENT-FAMILY:

PUB-NO	PUB-DATE	LANGUAGE	PAGES	MAIN-IPC
US 6090553 A	July 18, 2000	N/A	021	C12Q001/68

INT-CL (IPC): C12N 9/16; C12P 19/34; C12Q 1/68; G01N 27/26

Full | Title | Citation | Front | Review | Classification | Date | Reference | Claims | KWIC | Draw Desc | Image

☐ 25. Document ID: SG 44809 A1, EP 624643 A2, JP 06319599 A, CA 2122203 A, EP 624643 A3, JP 2527533 B2

L2: Entry 25 of 27 File: DWPI Dec 19, 1997

DERWENT-ACC-NO: 1994-350783
DERWENT-WEEK: 199809

TITLE: Preventing amplification of contaminating amplicons in isothermal amplification - by incorporation of uracil, treatment with uracil DNA glycosylase and then enzyme inhibitor, before subsequent amplification .

INVENTOR: FRAISER, M S; SCHRAM, J L ; WALKER, G T ; FRASIER, M S ; SCHRAM, J

PRIORITY-DATA: 1993US-0060842 (May 11, 1993)

PATENT-FAMILY:

PUB-NO	PUB-DATE	LANGUAGE	PAGES	MAIN-IPC
SG 44809 A1	December 19, 1997	N/A	000	C12N015/10
EP 624643 A2	November 17, 1994	E	013	C12N015/10
JP 06319599 A	November 22, 1994	N/A	009	C12Q001/68
CA 2122203 A	November 12, 1994	N/A	000	C12S003/20
EP 624643 A3	February 22, 1995	N/A	000	N/A
JP 2527533 B2	August 28, 1996	N/A	009	C12Q001/68

INT-CL (IPC): C12N 15/09; C12N 15/10; C12P 19/34; C12Q 1/68; C12S 3/20

Full | Title | Citation | Front | Review | Classification | Date | Reference | Claims | KWIC | Draw Desc | Clip Img | Image

☐ 26. Document ID: US 5945313 A, EP 522884 A1, CA 2073298 A, JP 06090755 A, JP 96011070 B2, EP 522884 B1, US 5683896 A, DE 69222897 E, ES 2109983 T3

L2: Entry 26 of 27 File: DWPI Aug 31, 1999

DERWENT-ACC-NO: 1993-010692
DERWENT-WEEK: 199942

TITLE: Oligo:nucleotide-dependent amplification for controlling contamination of prod - by incorporating an exo-sample nucleotide into products

INVENTOR: BERNINGER, M; HARTLEY, J L

PRIORITY-DATA: 1991US-0728874 (July 12, 1991), 1989US-0360120 (June 1, 1989), 1989US-0401840 (September 1, 1989), 1990US-0633389 (December 31, 1990), 1993US-0079835 (June 22, 1993), 1994US-0221465 (April 1, 1994), 1997US-0962701 (November 3, 1997)

PATENT-FAMILY:

PUB-NO	PUB-DATE	LANGUAGE	PAGES	MAIN-IPC
US 5945313 A	August 31, 1999	N/A	000	C12P019/34
EP 522884 A1	January 13, 1993	E	018	C12Q001/68
CA 2073298 A	January 13, 1993	N/A	000	C12N015/10
JP 06090755 A	April 5, 1994	N/A	019	C12N015/10
JP 96011070 B2	February 7, 1996	N/A	016	C12N015/09
EP 522884 B1	October 29, 1997	E	018	C12Q001/68
US 5683896 A	November 4, 1997	N/A	016	C12P019/34
DE 69222897 E	December 4, 1997	N/A	000	C12Q001/68
ES 2109983 T3	February 1, 1998	N/A	000	C12Q001/68

INT-CL (IPC): C12N 9/12; C12N 9/14; C12N 15/09; C12N 15/10; C12P 19/34; C12Q 1/68

Full | Title | Citation | Front | Review | Classification | Date | Reference | Claims | KWIC | Draw Desc | Image

☐ 27. Document ID: EP 401037 A, CA 2017522 A, JP 03058785 A, US 5035996 A, ES 2040199 T1, JP 95004248 B2, EP 401037 B1, DE 69022291 E, ES 2040199 T3, CA 2017522 C

L2: Entry 27 of 27 File: DWPI Dec 5, 1990

DERWENT-ACC-NO: 1990-363524
DERWENT-WEEK: 199750

TITLE: Process for amplifying 1 or more nucleic acid sequences - and for controlling contamination

INVENTOR: HARTLEY, J L

PRIORITY-DATA: 1989US-0360120 (June 1, 1989)

PATENT-FAMILY:

PUB-NO	PUB-DATE	LANGUAGE	PAGES	MAIN-IPC
EP 401037 A	December 5, 1990	N/A	008	N/A
CA 2017522 A	December 1, 1990	N/A	000	N/A
JP 03058785 A	March 13, 1991	N/A	000	N/A
US 5035996 A	July 30, 1991	N/A	004	N/A
ES 2040199 T1	October 16, 1993	N/A	000	C12Q001/68
JP 95004248 B2	January 25, 1995	N/A	005	C12N015/10
EP 401037 B1	September 13, 1995	E	120	C12Q001/68
DE 69022291 E	October 19, 1995	N/A	000	C12Q001/68
ES 2040199 T3	November 1, 1995	N/A	000	C12Q001/68
CA 2017522 C	June 18, 1996	N/A	000	C12Q001/68

INT-CL (IPC): C07H 21/00; C12N 9/22; C12N 15/10; C12P 19/34; C12Q 1/68; C12Q 1/70; C12S 3/20

Generate Collection

Term	Documents
DNA.DWPI,EPAB,JPAB,USPT.	102105
DNAS.DWPI,EPAB,JPAB,USPT.	10876
GLYCOSYLASE.DWPI,EPAB,JPAB,USPT.	522
GLYCOSYLASES.DWPI,EPAB,JPAB,USPT.	89
AMPLIF$	0
AMPLIF.DWPI,EPAB,JPAB,USPT.	68
AMPLIFABLE.DWPI,EPAB,JPAB,USPT.	2
AMPLIFACATION.DWPI,EPAB,JPAB,USPT.	2
AMPLIFACTION.DWPI,EPAB,JPAB,USPT.	6
AMPLIFACTIONS:.DWPI,EPAB,JPAB,USPT.	1
(DNA GLYCOSYLASE NEAR5 AMPLIF$).USPT,JPAB,EPAB,DWPI.	27

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L2: Entry 7 of 27 File: USPT Nov 30, 1999

DOCUMENT-IDENTIFIER: US 5993634 A
TITLE: Apparatus and method for the generation, separation, detection, and recognition of biopolymer fragments

DEPR:
At step 1116 the dUTP rich amplification primers are removed with UDG, uracil DNA glycosylase, from the Escherichia coli ung gene. UDG removes uracil residues from both single and double stranded DNA present in the reaction mixture. Loss of the uracil residue prevents DNA base pairing and exposes the DNA sugar-phosphodiester backbone to hydrolysis into fragments containing 5' and 3' phosphate termini. The resulting short fragments are no longer able to hybridize to DNA and cannot form a primer for further chain elongation in the following sequencing reactions step.